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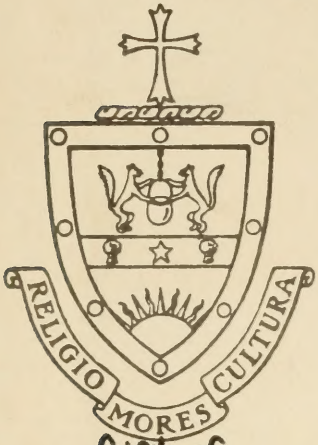

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Commonwealth of Pennsylvania

REPORT

OF THE

Department of Mines

OF PENNSYLVANIA

PART I---Anthracite

1916

HARRISBURG, PENNA.:
J. L. L. KUHN, PRINTER TO THE COMMONWEALTH
1917.

LETTER OF TRANSMITTAL.

Department of Mines,
April 1, 1917.

To His Excellency, Martin G. Brumbaugh, Governor of Pennsylvania.

Sir: In compliance with the Act of Assembly of April 14, 1903, I beg to submit herewith, for transmission to the General Assembly, the report of the Department of Mines for the year ending December 31, 1916. Part I covers in detail the operations in the twenty-five Anthracite Districts, and Part II the operations in the thirty Bituminous Districts, as returned by the Inspectors. Observations and suggestions are also offered relative to mining subjects.

Respectfully submitted,

JAMES E. RODERICK,
Chief of Department of Mines.

REPORT

OF THE

DEPARTMENT OF MINES

INTRODUCTION

The coal production of Pennsylvania in 1916 was 256,804,012 net tons, an increase of 10,006,238 tons over 1915. The number of employes in and about the mines was 333,473. The anthracite production was 87,680,198 tons, a decrease of 1,697,508 tons from 1915. The number of employes was 159,169. In the bituminous region the production was 169,123,814 tons, an increase of 11,703,746 tons over 1915. The number of employes was 174,304. The anthracite production falls below the records of 1913, 1914 and 1915. The bituminous production for the year has been exceeded only once, in 1913.

ACCIDENTS

The total number of fatal accidents during the year was 1,001 and non-fatal 3,316, total 4,317. In the anthracite region there were 565 fatal accidents and 1,510 non-fatal, total 2,075, as compared with 588 fatal and 995 non-fatal in 1915, and 600 fatal and 1,038 non-fatal in 1914. In the bituminous region there were 436 fatal accidents and 1,806 non-fatal, total 2,240, as compared with 442 fatal and 1,315 non-fatal in 1915, and 413 fatal and 963 non-fatal in 1914. The number of fatalities per 1,000 employes in the anthracite region was 3.55, as compared with 3.32 in 1915 and 3.32 in 1914. In the bituminous region the number was 2.50, as compared with 2.35 in 1915 and 2.11 in 1914. In the anthracite region, if the percentage had been as low in 1916 as it was in 1914, that is, 3.32, the number of lives lost would have been 528 instead of 565. In the bituminous region, if the percentage had been as low in 1916 as it was in 1914, that is, 2.11, the number of lives lost would have been 388 instead of 436. In the anthracite region the production per life lost was 155,186 tons, as compared with 152,003 tons in 1915 and 151,982 tons in 1914. In the bituminous region the production per life lost was 387,900 tons,

as compared with 356,154 tons in 1915 and 353,231 tons in 1914. The fatalities in 1915 and 1916 were about 10 per cent. greater per 1,000 employes than in 1914..

The record for the year is disappointing in view of the great efforts that have been made to reduce fatalities. The number of mine inspectors under the supervision of the Department of Mines has been increased and additional inspections have been made by representatives of the Insurance Companies. It is also a fact that the Compensation Law that went into effect the first of January made the operators realize the need of more careful operation of the mines in order to keep as low as possible the cost of compensation. The number of officials in charge of the mines has been increased, more frequent inspection is being made of the working places, haulageways are being kept clear of refuse and greater room is allowed for movement of cars. More telephones are being installed and also more efficient electric systems of signals for the safe operation of electric locomotives and cars. The machinery generally is better protected than ever before and the practice of posting signals at the mines has greatly increased. Notwithstanding the greater efforts put forth in the way of safeguarding the employes, the number of accidents has increased.

A number of gas explosions occurred during the year in both regions. In the anthracite region an explosion at the Lance No. 11 Colliery of the Lehigh and Wilkes-Barre Coal Company resulted in the death of 7 persons, an explosion at the Hollenback No. 2 Colliery of the Lehigh and Wilkes-Barre Coal Company resulted in the death of 6 persons and an explosion at the Woodward Colliery of the Delaware, Lackawanna and Western Railroad Company resulted in the death of 6 persons, making a total of 19. Reports of these explosions with maps of the mines are printed in this Report.

In the bituminous region there were two serious explosions by which 35 persons were killed. On February 11 at the Ernest No. 2 mine of the Jefferson and Clearfield Coal and Iron Company in the Twenty-fifth district, an explosion killed 27 persons, and on March 30, at the Robindale mine of the Conemaugh Smokeless Coal Company in the Thirtieth district an explosion killed 8 persons.

The fatalities among bituminous employes caused 278 widows and 636 orphans and among anthracite employes 373 widows and 874 orphans.

The coke production amounted to 26,428,926 tons, exceeding by almost 2,000,000 tons the great production of 1913.

The production of both coal and coke has steadily increased since 1899 when the bituminous output was 73,066,943 tons, which shows an increase of 131 per cent., anthracite 60,518,331 tons, an increase of 45 per cent., and coke 12,192,570 tons, an increase of 117 per cent.

LABOR CONDITIONS

The year was notable for the advent of colored workmen in great numbers. In the Pittsburgh region particularly many thousands of negroes from the South have been employed. All operators found it difficult to obtain sufficient labor to operate the mines. The old

employes felt the lure of the greater wages offered by the munition plants and other manufacturing concerns, and new employes for the same reason were extremely hard to obtain. To meet the conditions and to maintain sufficient force to operate the mines, wages have been advanced in both regions. The mine employes are now receiving greater pay than ever before.

Labor troubles in various parts of the coal fields also added to the anxiety of the operators and rendered more difficult the keeping of contracts. The strikes that occurred throughout the year, although individually rather unpretentious, had a cumulative effect great enough to reduce the output probably 3,000,000 tons.

CONDITION OF THE TRADE

The operations of the year were of an unusual character. Throughout most of the period there was a feverish activity in both regions, with sharp contrasts in prices and exasperating uncertainty, due to car shortage, labor troubles and embargoes placed upon traffic. The distinguishing feature of the trade, however, aside from the great production, was the high prices quoted for all grades of coal and for coke. The war, by stimulating nearly all lines of manufacture, created an abnormal demand for coal that resulted naturally in abnormal prices and brought to the operator a period of prosperity hitherto unequaled in the history of mining.

In many instances a heavy strain was placed upon the producers, but those who were properly equipped with mining facilities and not obligated by previous contracts at moderate prices reaped a golden harvest. A great disparity in prices is shown between the operators who were at the time under contract at low prices and those who, not being tied up, were able to avail themselves of the exceptional conditions of the trade. In the anthracite region, the former operators received probably not more than three dollars a ton, the normal price at the breaker, while from seven to eight dollars was the extraordinary price received by other operators. In the bituminous region the price advanced from two dollars to six or seven dollars, in many instances, with a general average of five dollars, and the operators very naturally felt that prosperity was knocking at their door, as they were receiving two or three times the usual price.

The present high prices in both regions may be expected to continue for sometime in the future, although there will no doubt be a gradual reduction to a more reasonable basis. Coal, however, may never be as cheap again as it has been at times during the past four or five years.

The cost of mining is constantly increasing, owing to exhaustion of the thicker and more accessible veins, making it necessary to go deeper into the earth to work the thinner veins. The great increase in the wages paid to the miners is another cause, and it is scarcely among the possibilities that wages will ever return to the old low level of the past.

The coal industry enters upon the new year under conditions of great activity, but with an unusual degree of uncertainty as to how

long the activity will continue. The unsettled condition of National affairs makes this industry, as well as most others, somewhat of a gamble for the near future.

INCREASE IN THE NUMBER OF MINES IN OPERATION

Due to the urgent demand for coal during the past few months, many old and practically abandoned mines in both regions, especially in the bituminous region, have come into operation again, and coal that two or three years ago could not be sold at any price is now finding a ready market. A great deal of coal that never was intended to be utilized has been taken from these mines and sold at fancy prices. Several of the companies have succeeded in utilizing the roof coal from the Pittsburgh vein in the bituminous region. This coal has generally been classed as refuse but it is now carefully washed and freed from its impurities and used to generate steam at the plants of the companies.

Many new small mines have also been opened during the year in the bituminous region, and in the aggregate they produced hundreds of thousands of tons of coal, but as they did not come under the law owing to the small number of employes, no official record was made of their production.

A NEW UNDERGROUND SYSTEM OF HAULAGE

In the bituminous region an interesting plan of work has been announced by the H. C. Frick Coke Company in connection with their various mines. The plan is to connect a large number of mines by an underground system of haulages or railways with mines or openings along the Monongahela river front, from where the coal will be transported by boats to the large by-product coke plant now being constructed at Clairton near Pittsburgh. The underground haulages will be operated from a central electrical plant. Fifty-ton electric locomotives will be used to haul the coal from the various mines inland from the Monongahela river. Large mine cars of a capacity of about four tons will be used. The haulageways will be ventilated by special fans.

The main openings to which the coal will be hauled along the river front are the Bridgeport mine near Brownsville, the Crowthers mine, the Palmer mine (two hoisting shafts), the Gates mine (two hoisting shafts) and the Ronca mine. These mines extend from Brownsville to Masontown along the front of the Monongahela river, a distance of about twenty-five miles. The mines inland for a distance of fifteen miles which will be connected with the openings along the river front are the Edenborn, Lambert, Leckrone, Buffington, Footdale, Filbert, Ralph and Sarah.

It is expected that these plans will be completed in about four years, but some of the mines will be connected possibly this year. This will cause the abandonment of the coke ovens now in operation at the mines mentioned, as the coal will be transported to the by-product coke ovens at Clairton. The various mining towns will be maintained as at present except the coke oven sections.

EDUCATION OF MINE EMPLOYES

From the time that mining operations became extensive enough to be classed among the important industries of the Commonwealth, the welfare of the miner has been a subject of constant agitation and frequent legislation. The State has provided a large and efficient force of inspectors to enforce the safety provisions of the laws, and the operators, although their chief concern has naturally been the output of coal, its quantity and cost, have nevertheless through their solicitude or by reason of the stimulating and impelling power of the mining laws, given much attention to the protection and comfort of their employes.

With all the mining interests united to make mining conditions as safe as possible, it would seem that about everything had been done to reduce the hazard and lessen the number of casualties. It is a fact, however, that all the efforts made to reduce accidents have failed to bring about a material lessening of the number. They still continue to occur with alarming frequency and in view of all the preventive measures available and in force, the only possible hope for a betterment in conditions lies with the workers themselves, who must exercise greater care in the daily and continuous performance of their work. It is almost incredible that with all the modern safety appliances, the improved methods of mining, the comprehensive mining laws and the stringent rules for the guidance of employes, there should be no appreciable reduction in the number of accidents. There are several reasons, however, for this apparently illogical state of affairs. Two of the most important are, (1) the mining of coal is now more difficult and hazardous than ever before, and (2) the ignorance and the resultant carelessness on the part of the workers.

Years ago bituminous coal was extracted chiefly by the use of the pick and without any particular rush. To-day machines are largely used and a feverish haste characterizes nearly all operations. The coal then lay easy of access and easy to mine. To-day the veins are deeper in the earth and the coal is much more difficult to extract. In the early days of mining the Pennsylvania miner was a graduate from the mines of Great Britain, with small percentages from Germany, Belgium and France. He was intelligent and skillful and his ability as a workman was equaled by his appreciation of the dangers that surrounded the occupation. Today most of the new miners come from Southern Europe, many from the agricultural regions populated by the Slavish race, and are without any knowledge of mining and possess very little knowledge in other directions.

It is evident, therefore, that outside aid, practical suggestions and legal provisions can accomplish but little more in the way of reducing accidents. Unquestionably the existing measures protecting the mine workers are sufficient to make the industry much safer than it is, but the individual worker must exert himself if he is to hope for greater immunity. The personal equation enters very largely into the subject and it is this phase that must be considered in any further effort made to lessen the number of accidents. The individual must be educated and impressed with the necessity for looking after his own safety and the safety of his fellow workers.

There exists a pressing need, therefore, for more thorough education of the workers. The more intelligent the worker the more care-

ful, other things being equal, is he in his work. This fact is fully realized by all mining men, and their desire to increase the educational facilities has resulted in the inauguration of night schools, mining institutes, vocational schools and other means of imparting knowledge. A school started by the Lehigh Valley Coal Company, back in 1909, was the pioneer institution of the kind in the anthracite region. Briefly, its purpose is to afford opportunity for education to all classes in and about the mines. The records from the very first show that the opportunity was very fully appreciated, as hundreds of men were quick to take advantage of the new method of obtaining instruction.

The schools of this class have recently passed under the management of the Vocational Division of the Department of Public Instruction of Pennsylvania, in connection with the various school district authorities.

These schools are continuing their splendid work and achieving notable results. In this connection it should be stated that there is another phase of educational work being conducted in a good many districts of which little is heard, and yet it is productive of much good. This is the work of the small night schools held at the different plants in whatever buildings are found suitable, at which the elementary branches of mining are taught by the officials to those who are anxious for improvement and have no other means of attaining an education. These modest classes are producing some efficient men, chiefly because the work has been among those who are anxious to improve their condition and has been conducted by competent officials who, in a most sacrificing manner, devote two or three evenings a week to the work without any compensation other than the feeling that they are doing something to help other fellow-men along.

The education of the foreign born workers in the one branch of English alone is said to increase their efficiency about twenty per cent. Just to what extent the conditions of safety are increased is not known, but probably the percentage is as great as in the matter of efficiency. This shows the practical side of the question and makes a special appeal to the employer. The employer who endeavors to improve his employes is in some cases entitled to a good deal of sympathy, as the task is not an easy one owing to the illiteracy of the non-English speaking employes and to the fact that as a general rule they are reluctant to take up the work of mental improvement after a hard day's work, when tired and in no mood for mental effort.

The benefit of education is two-fold; the pupil is better fitted for his work and has much more assurance of promotion, and the operator obtains a more intelligent and efficient worker. Many mine workers have a desire to obtain better and higher positions, and as a college course is out of the question, these inexpensive courses are eagerly sought after as a substitute. The helpful talks given from time to time by the mining experts add to the pupil's knowledge and are a most practical aid in his effort to improve himself.

The English language is perhaps the most important branch taught in the mining institutes and other schools, as through its medium the pupil can more readily study the following branches: mine law, mine gases, ventilation, haulage, drainage, timbering and pumping, which knowledge is essential for the practical work in the production of coal.

FIRST AID AND COMMUNITY WORK

In reviewing the great coal mining industry of the Commonwealth, there are other phases worthy of consideration besides the practical mining operations. A good deal of attention has been given to the First Aid Work, Community Work and Education. The latter subject is treated of in another article in this Report.

FIRST AID

First Aid instruction has become general throughout both regions. Two reasons are assigned for the increased interest in this cause. First, the instruction given to the employes in connection with the work has a tendency to make them more thoughtful and more alert to dangerous conditions, with a resultant beneficial effect that appeals to the employer, and hence his greater attention to the establishment and training of First Aid Teams. Second, the installation of these teams at the mines has resulted in the reduction of the premium rates of Insurance Companies.

COMMUNITY WORK

One of the progressive features of the mining industry is the increased attention given to the things that pertain to the home life and social needs and pleasures of the community. The houses are made more attractive and convenient. The yards and gardens are beautified and improved. Playgrounds are rapidly growing in number and a general desire is evident to better the living conditions and make more agreeable the home life of the community.

In some districts, however, the social conditions are still neglected and while the laws that have been enacted in recent years compel the operators to provide safe and healthful conditions under which the employes shall work, thus remedying to a great extent the conditions of twenty-five years ago, there has been little done to improve the houses built long ago, which in many cases are now most inconvenient and unsanitary.

Much of the Community Work is due to a humanitarian spirit and part to an intelligent and shrewd endeavor on the part of the employer to make the surroundings of the miners so desirable that they will have less desire to desert the mines for other occupations. It is a fact, however, that with the remarkable and unprecedented prices received for coal, and with many operators growing rich as a result, there should be even more attention given to the social condition of the people.

ANTHRACITE REGION

A few of the companies in the anthracite region have enlarged upon their Community Work and First Aid Work to some extent, but progress in that region is confined more particularly to the practical

working of the mines. Great attention is given to improved methods of mining, safety appliances, sanitary conditions and the general welfare of the miner while at work, but not so much to the home or social life of the community.

As an example of what some of the progressive operators are doing for the benefit of their employes and families and for the betterment of conditions generally, a statement is given of the work done by the Kingston Coal Company, operating in the Ninth and Twelfth Anthracite Districts.

This company has established the following features:

A General Safety Committee of twelve, which meets several times a month. The members alternate as chairman, each serving for a month. Sub-safety committees at the mines have also been organized.

The office of General Safety Inspector.

The apportionment of the mine into smaller districts for fire bosses, roof and face inspectors.

The establishment of fire-boss passing stations in the morning nearer to the face of the workings.

Electric reflector lamps on shaft carriages.

The following words printed in red ink on miners' pay statements, stubs and pay envelopes—"Think of Safety First to Prevent Accidents. If, however, any employe is injured, such should be REPORTED IMMEDIATELY to a colliery official to obtain First Aid, Medical Service and Compensation."

The publishing of a calendar for the year 1917 for "each of its employes asking his co-operation in the effort to prevent accidents and to further the welfare and civic uplift of the community in which he lives."

The establishment of another standard playground, making a total of five now maintained by the company, three in Edwardsville, one in Plymouth and one in Pringle.

There has been increased activity on the night school in the company's free library at Edwardsville.

Donated a dwelling-house in Kingston for the West Side Settlement Association, adjoining the free kindergarten.

Shade and fruit trees have been given to the employes for their yards and around their homes.

The company maintains a sanitary wagon for cleaning up ashes and debris from the homes of its employes.

Donated funds to maintain one or more nurses at the West Side Visiting Nurses' Association.

It has been the aim of the company to co-operate with the municipal and civic authorities for better sewerage, paved streets and fire protection, and for the general uplift of the community.

Several safety bridges and subways have been constructed and fencing placed around tracks to lessen the danger of accidents to employes.

Small hand bars are being used in small veins for roof testing and to remove dangerous pieces.

First hour visits are being made in all collieries by the official force and some representative miners.

The telephone system has been extended to distant sections of the mines.

The visits of the company surgeons, in connection with the visits of the safety inspector made on account of the Compensation Act, have also brought the company into closer touch with the families of the employes.

The question of having free dental clinics for miners' children has been considered, but as yet not acted upon. The same also applies to free oculist services for children.

BITUMINOUS REGION

One company in the bituminous region, and perhaps there are others, has organized a Company Fraternity League for all employes, high and low. Meetings are held frequently that are entertaining and instructive, usually closing with a moving picture designed to impress upon the spectator the tragic results of carelessness in the miner's work and containing suggestions and precautions as to how to avoid accidents. This combination of entertainment and instruction is a good means of educating the people and is bearing notable results.

As an example of what is being done by some of the more progressive companies, a detailed statement of the activities of the Ellsworth Collieries Company in the First Bituminous District, Washington county, is given herewith. This company makes an effort to give the men, women and children every possible opportunity for self-improvement.

The educational work of this company is accomplished through a most modern system of public schools for the children, continuation schools for the women during the morning, and night schools for the men.

Public schools embrace:

First, supervised play the year through for children of all ages.

Second, four kindergartens for children from four to six years of age.

Third, the regular eight grades in the common schools.

Fourth, a regular four-year high school course, which will admit graduates to colleges or industrial schools.

Special departments:

First, department of household arts for the girls, in which they are taught cooking, sewing, general housekeeping, marketing, and household accounts.

Second, manual training department for the boys, in which they are given shop work with the special idea of training them in the art of handling tools to give them sufficient skill to do the common repair work about the house as well as to manufacture common articles of furniture.

Third, special classes are conducted in mechanical drawing for the boys, in order to train them in the use of working drawings and blue prints.

Fourth, the girls have a class in basketry which has for its purpose the development of manual skill and training in design. Individual instruction is given upon the mandolin to members of the high school without cost.

The night school system:

This department has been organized under the direction of the Vocational Division of the Department of Public Instruction.

The teachers, although practical men employed by the company in various capacities, are required to pass a special examination conducted by the State Department of Public Instruction and if they are not granted certificates they are not permitted to teach. The classes which have been conducted in the night schools are as follows:

First, classes for mine foremen.
Second, classes for fire bosses.
Third, classes in the common branches.
Fourth, classes in naturalization.
Fifth, classes in household arts.
Sixth, classes in shop work.
Seventh, classes in stenography.
Eighth, classes in English for men and women.

The course of study in mining was prepared under the direction of one of the State Mine Inspectors and approved by a committee of inspectors.

EXPLOSIONS OF GAS

Three explosions of gas occurred in the anthracite region during the year, all of which occurred in Luzerne county, one at the Lance No. 11 Colliery of the Lehigh and Wilkes-Barre Coal Company, February 8, in which 7 lives were lost, one at the Hollenback No. 2 Colliery of the Lehigh and Wilkes-Barre Coal Company, March 9, in which 6 lives were lost, and one at the Woodward Colliery of the Delaware, Lackawanna and Western Railroad Company, August 8, in which 6 lives were lost, a total of 19.

Two of these explosions would not have occurred had the persons directly in charge of the mines used ordinary precautions. In the case of the explosion at the Hollenback No. 2, however, it was shown that the usual precautions against explosions had been taken by the persons in charge, such as the use of locked safety lamps and safety powder, but in spite of these protective measures, it was evident that someone was careless or neglectful of his duty.

Several inspectors were directed by the Chief of the Department to accompany the inspectors of the districts to make a thorough examination of the mines to ascertain, if possible, the causes of the various explosions. The Chief visited personally the Hollenback Colliery, but could not go into the mine as the coal had taken fire and the section where the explosion occurred had been sealed. After this section was reopened the inspectors made a thorough examination.

Reports of the investigations are given herewith together with the tracings of the mines.

EXPLOSION AT LANCE NO. 11 COLLIERY

REPORT OF INSPECTOR D. T. DAVIS, TWELFTH DISTRICT

February 8, 1916, an explosion of gas occurred at Lance No. 11 Colliery, Lehigh and Wilkes-Barre Coal Company, at about 12.45 P. M., in what is known as No. 5 Slope, Ross seam, 6 East, Southrise gangway, by which 7 persons were killed and one person seriously injured. In order to fully ascertain to what extent No. 5 Slope and slope airway generated gas, tests were made when the slope was idle and all workmen were absent from this section of the mine. One test consisted in opening the two check-doors on Southrise gangway for thirty minutes, which resulted in diminishing the quantity of air provided for the face of slope and slope airway. No gas was found. The second test consisted in opening main doors on 6 East, and leaving check-doors on Southrise still open for a period of thirty minutes. No standing gas was found in any portion of the slope face or slope airway. No indication of a cap was to be observed in the lamp. The only place where gas could be detected by the safety lamp was against the pillar along the anticlinal axis. The first theory advanced by the mine officials was that an outburst of gas had taken place at the foot of the anticlinal along the return airway, that explosive gas had been detected coming from a crack in the bottom rock, the crevice extending a distance of twenty-five feet in length and about two inches in width. I made a test of this crevice, but could not detect any gas.

I also made tests in chambers Nos. 1 and 2 Southrise gangway where the brattices in the crosscuts between chambers had been destroyed, depriving them of the current of air, but could not detect any gas.

The opinion that an outburst of gas took place was rather premature and unfounded. Nothing of a substantial nature to support this theory could be advanced, for these underlying seams had been mined by the slope and slope airway advancing, and as these openings were but a few feet away the coal was giving off gas naturally from this source.

The opening in the bottom rock, about two feet above the vein, may have been an old one and was invisible on account of being covered with the debris of the mine. In this immediate vicinity the props were charred very badly, and I attribute this condition to the main body of gas which had reached this point becoming ignited by a smaller body of gas (by the lamp of Stanley Szuska) on the split of air that contained 17,000 cubic feet per minute, the flame trailing back to the greater body of gas which was moving sluggishly on the smaller split of air 8,000 cubic feet per minute.

I am of the opinion that a large accumulation of gas had taken place in the face of the slope and slope airway, and when the trap door placed in the stone wall between slope and slope airway was

closed and the air assumed its natural course, the velocity of the current was not sufficient to move the body of gas immediately, but lessened the volume and finally moved the remaining gas, which was ignited in the vicinity of the crevice and produced much flame; but the gas was extinguished by the concussion of the explosion that occurred on the main current, (a few of the walls having been destroyed) thereby creating a large percentage of carbon monoxide, (miners' white damp), and a portion of the current of air short-circuited and carried the products of incomplete combustion upon the men, resulting in their suffocation.

REPORT OF COMMISSION OF INSPECTORS

Hon. James E. Roderick,
Chief of Department of Mines,
Harrisburg, Pa.

Dear Sir: As per your instructions, we, the undersigned mine inspectors, on the 9th day of February, 1916, made an inspection of No. 5 Slope, 5 and 6 East, also 6 East Southrise, Ross seam, Lance No. 11 Colliery, of the Lehigh and Wilkes-Barre Coal Company, wherein an explosion of gas occurred February 8, 1916, about 1.00 P. M., resulting in the death of seven persons and the serious injury of one other person.

The object of the inspection was to determine as far as possible the cause of the explosion and its initial point.

No. 5 Slope, Ross seam, and 13 plane, is practically one mile in length, and was driven on the dip of seam on an average grade of 14 per cent. The foot of the slope is one thousand feet vertically beneath the surface. A short distance below 6 East lift an anticlinal was encountered, which divided the vein into three splits. The Upper or Ross seam proper was mined until the seam assumed its original pitch of the slope, and afterward abandoned until such time as a gangway could be driven in the basin at the bottom of the Southrise, and when directly opposite the slope two places would be driven to tap the slope and slope airway. This was the purpose of the Southrise gangway to still further develop No. 5 Slope proper.

On the Southrise gangway chambers Nos. 1 and 2 had been driven over the anticlinal and were going to the dip. Safety lamps were used in the chambers, but the workmen had been given permission by the mine foreman to use naked lights on the gangway. The foreman stated that the purpose of using safety lamps in these two chambers was to prevent feeders of gas from becoming ignited by open lights. Monobel is used for blasting and is fired by an electric battery. It appears that on the day of the explosion, John Davis, section foreman, and William Davis, fire boss, made an inspection of all working places in No. 5 Slope, Ross seam, and then made an inspection of the old workings, which they completed about 11.45 A. M. The fire boss, having completed his day's work, went home. The section foreman, (Mr. Davis) returned to 4 East to eat his lunch and, while

so engaged an explosion occurred which opened doors violently and extinguished the lights of the men employed in this lift. Mr. Davis, with another person, hastened down the slope to 6 East and saw George Gorki, a runner, lying unconscious on slope road opposite 6 East lift. He entered the Southrise gangway to chamber two and found Stanley Szuska, a miner, in an unconscious condition. The evidence of the presence of after-damp in a dangerous quantity was so convincing that in order to save his own life he immediately retreated toward the slope. Feeling the effects of his experience in endeavoring to rescue the men, he sat down on the slope road and was discovered by the mine foreman and others who had reached the scene of the disaster. The mine foreman immediately made an examination of the main doors on 6 East gangway and found them destroyed. The third door, which had been fastened against the pillar, was found in good condition and closed. This directed the current into the Southrise gangway, which enabled them to proceed with the work of rescuing the men employed on this gangway. Unfortunately Mr. Davis did not have the presence of mind at the moment to close this emergency door (which had been erected to meet such a need). The closing of the door would have diverted the current of 25,000 cubic feet of air in the Southrise gangway, and in all probability the lives of several men would have been saved.

The damage to the mine on Southrise gangway was about six sets of timber dislodged and a few others staggered; two check doors and three walls between airway and gangway destroyed; brattice in crosscuts were destroyed and several props dislodged in chambers Nos. 1 and 2. In 6 East, main doors were destroyed, and between slope and slope airway two walls destroyed. Props were badly charred.

On the morning of February 9, we had decided to commence our inspection on the slope and slope airway, but on account of the walls having been blown down these places had filled with gas. We then proceeded to Southrise gangway, afterward to 6 East workings, and finally to 5 and 4 East. February 10, we made an examination of the face of slope and slope airway, the gas having been removed the night previous. These slope workings are ventilated direct from a shaft located a short distance west of the head of No. 5 Slope extension. 25,000 cubic feet of air, distributed in two splits, are provided for this slope; 17,000 cubic feet are directed in 6 East and 8,000 cubic feet for the faces of slope and slope airway, both currents meeting on Southrise gangway and traveling as one split of air for the remaining slope workings, thence to the fan. This volume of air is ample and adequate for this section of the mine. The fan is the Guibal type, 35 feet in diameter, running 49 revolutions per minute, with a water gauge of 2.1 inches.

After a very thorough examination of all portions of the slope, we are of the unanimous opinion that gas accumulated in the face of No. 5 Slope and No. 5 Slope airway, Ross seam, due to a trap door remaining open, that was erected in a wall between slope and slope airway at the bottom of the anticlinal. The open trap door allowed the short circuiting of the air, which deprived these two places of the necessary amount of air to keep them clear of explosive gas, and the closing of this trap door by some unauthorized person before an examination was made of the faces of these two places to ascertain their

condition, resulted in moving upon the men employed in 6 East Southrise gangway a body of gas, which was ignited by the open light of Stanley Szuska, a miner.

D. T. DAVIS,
Inspector of 12th Anthracite District.
THOMAS J. WILLIAMS,
Inspector of 11th Anthracite District.
JOHN B. CORGAN,
Inspector of 10th Anthracite District.

Verdict of the Coroner's Jury

"That the deceased came to his death February 8th, 1916, at Plymouth, Pa., from inhaling after-damp coming from an explosion of gas in 6 East airway leading to Southrise of Mine No. 11 of the Lehigh and Wilkes-Barre Coal Company." It was decided death was due to an unavoidable mine accident.

EXPLOSION AT HOLLENBACK COLLIERY

REPORT OF INSPECTOR T. J. WILLIAMS, ELEVENTH DISTRICT

On March 9, a serious explosion occurred at the Hollenback Colliery of the Lehigh and Wilkes-Barre Coal Company, in the Red Ash vein, No. 6 Slope, 1st East gangway, at about 12.45 P. M., causing the death of six persons.

As soon as I heard of the accident I went to the mine, entering about 3.45 P. M. I found that a fierce fire was raging in the 1st East gangway, and learned from John D. Joseph, the inside superintendent, that all the men working in this lift, with the exception of one, who had left for his home prior to the explosion, were still in the affected section.

Several efforts were made by Mr. Joseph and other mine officials, together with the inspector of mines, to rescue the men entombed, but owing to the dense smoke and poisonous gases given off by the fire it was physically impossible to explore the affected section. After making some changes in the ventilation we were enabled to approach the face of the 1st East gangway by following the ventilating current up chamber No. 16 from the slope airway. Upon reaching the gangway we found the body of George Horney, the rock unloader, whose clothing was still burning. We then traveled along the gangway to chamber No. 9, or the inside chamber on the gangway, where we encountered a serious fire, the extent of which was such that our efforts to extinguish it by the use of water were of little avail. This in connection with frequent explosions prompted my colleagues, D. T. Davis, Frank Kettle, D. J. Thomas, foreman, and myself to withdraw the workmen until we further investigated. After the investigation we concluded that it would be unsafe to make any further effort to extinguish the fire owing to the dangers present by reason of gas explosions and roof conditions.

We then went to the surface for the purpose of consultation with the company officials in reference to adopting a safe plan to extinguish the fire. However, it was first unanimously agreed that the lives of the entombed men were extinct, and it was further agreed by all present that any further attempt to rescue them under existing conditions would probably cause a further sacrifice of human life, and that the only safe and practicable method to obtain the bodies of the entombed was to first extinguish the fire by sealing off the affected section of the mine.

Work on the seals was commenced immediately. The points selected for the erection of the first seals were the intake airways, namely, the slope and slope manway, indicated by "A" and "B" on the map. Several minor intakes were then closed and lastly the return.

The erection of the stoppings was commenced on March 10, and they were all completed March 19 and remained sealed until May 14, when the first seals were opened and an effort was made on May 18 to explore the 1st East gangway. This was found impossible on account of a large accumulation of gas. After the removal of this gas on May 19 we explored the section and found the bodies of Edwin Jones, door tender, John Miskin, driver, William Kurzinski, miner, and George Kamconka, laborer, inside of chamber No. 5. The body of Leo Kazenski, miner, was found in chamber No. 8, about 25 feet from the gangway on August 29.

REPORT OF COMMISSION OF INSPECTORS

Hon. James E. Roderick,
Chief of Department of Mines,
Harrisburg, Pa.

Dear Sir: The commission appointed by you to investigate and report the cause leading up to the explosion of gas that caused the death of six persons, in the Hollenback mine of the Lehigh and Wilkes-Barre Coal Company, on March 9, 1916, begs to make the following report:

After a thorough inspection of the mine and the examination of several witnesses we are enabled by the knowledge obtained in this manner to arrive at two conclusions, either of which may have been the true cause of the accident.

Our first conclusion is, that the miner in chamber No. 8 ignited a body of gas by a blast. We are supported in this conclusion by the discovery of the electric battery used by this miner, so placed and adjusted with the wires attached and in such position as to indicate that he had just fired a blast.

We are further supported in this theory by the fact that the coal at the face of chamber No. 8 was of a shelly or laminated character. A coal of this kind would readily permit the miner to over-charge the blast, notwithstanding the fact that monobel (permissible) powder was used in this case. We can readily assume that the hole was probably over-charged and that only a small part of the energy stored up in the powder was consumed in breaking down the coal, and the remaining energy was spent in flame in the open atmosphere, which was no doubt heavily charged with methane.

Our second conclusion is, that the miner in chamber No. 8 fired the blast herebefore mentioned, the firing of which possibly liberated a volume of methane.

The place in which the body of Leo Kazenski, miner, of chamber No. 8 was found, namely, twenty-five feet up his chamber from the gangway road, at the inside of a car that stood in the chamber, would indicate that he was on his way back to the face of the chamber or was probably working at this point when the gas was ignited in some manner unknown to us.

That the volume of gas was large and its mixture with air was such as to permit the propagation of flame only, is manifested by the following facts.

First. That several doors in the vicinity of the explosion, some of which were not more than 150 feet from the initial point of said explosion, were left intact and very little damage was done to any part of the mine.

Second. That the volume of methane was large is again indicated by the discovery of burning timber 600 feet from the initial point of the explosion and the burning of the clothing on Horney's body at about the same distance.

The section of the mine in which the explosion occurred was a locked-safety lamp district. Monobel powder was used for blasting and all blasts were fired by electric batteries.

The type of lamps used in this section by the miners, namely, the "Davy" is not the lamp commonly used by other coal companies in mines of this character. We are informed, however, that the president of this company, Mr. C. F. Huber, has been considering for some time the adoption of an improved safety lamp for use in his mines.

We further note that the safety lamps used in this mine are cleaned, examined and filled in a poorly lighted room in the mine, which practice is peculiar to this company.

We feel that rooms in which safety lamps are examined, cleaned and stored, should be located on the surface and kept clean and well lighted, so that any defects or the improper assembling can be readily detected.

Respectfully submitted,

THOMAS J. WILLIAMS,
11th Anthracite District.
JOHN B. CORGAN,
10th Anthracite District.
D. T. DAVIS,
12th Anthracite District.
FRANK KETTLE,
13th Anthracite District.
JOSEPH J. WALSH,
14th Anthracite District.

Report of Coroner's Jury

An inquest was held by Deputy Coroner Stanley Kuryloski, September 8, 1916, and the following verdict given: "After hearing the following witnesses, William Irvin, George Roberts, John Williams, Michael Williams, James Buttson, Anthony Matuzza, Peter P. Jones and David Thomas, it was found that the decedent, Leo Kazenski, with five others, was burned to death through an explosion of gas caused in an unknown manner. It being an unavoidable mine accident."

EXPLOSION AT WOODWARD COLLIERY.

REPORT OF INSPECTOR D. T. DAVIS, TWELFTH DISTRICT

August 8, 1916, an explosion of gas occurred at Woodward Colliery, No. 3 Shaft, No. 26 Slope, Hillman vein, of the Delaware, Lackawanna and Western Railroad Company, by which 6 persons were killed.

No. 3 Shaft is sunk to the Baltimore vein at a depth of 815 feet and penetrates the vein on the Southrise.

The Hillman vein development is principally in No. 26 Slope, pitching from 12 degrees at the head of the slope and varying to almost level at other parts. The development is proceeding very rapidly. All the work, practically, is double shifted. The seam is known to be very gaseous, and in order to protect life, improved locked safety lamps are used exclusively, and permissible explosives, with their equivalent detonators, are used for blasting and fired by electric batteries.

The great majority of the persons employed at No. 1 East 26 slope, Hillman vein, had quit work for the day after the semi-weekly measurement of their places had been taken, a short time prior to the explosion. If they had remained at work the loss of life would no doubt had been much greater.

Walls and brattices were completely destroyed in this lift. The force of the explosion was so great that it was noticeable to all the workmen in all the other parts of the Hillman vein.

Realizing the danger from after-damp, the men hurried to the shaft. It was evident from the destruction that the fire damp had reached its most explosive point. Concrete walls, 9½ inches in thickness, between the main slope and slope airway, above and below 1st West, where the explosion occurred, were moved out a distance of over three feet, and parts of the walls blown out ranging from three feet four inches to four feet four inches and to seven feet four inches, while walls in close proximity to the lift were blown to atoms. The slope road moved 2 feet from its alignment, and "T" iron rails constituting a portion of the slope road were torn from their fastenings and turned on their sides. Doors were converted into matchwood and scattered in every direction. A trip of empty cars standing several hundred feet above No. 1 West lift on the slope branch was derailed and several cars were thrown across the track. A loaded car was standing a short distance in the lift where the explosion occurred and the rear mule of a team was hooked to the head of the car. The topping and a large portion of fine coal in the car had been blown away and the lead mule was found in the rear of the loaded car. The doorboy, John Litwok, was blown up the slope a distance of 90 feet and probably dashed against the pillar. When his body was found he still held the handle of the door gripped tight in his hand. The bodies of Globoski, a runner, and Hilton, a footman, were found close to where they were engaged at work when the explosion occurred.

There is sufficient evidence to show that the entire atmosphere of No. 1 West gangway had reached a fire-damp mixture of a highly explosive character which, when it ignited, made this passageway a veritable seething furnace.

REPORT OF COMMISSION OF INSPECTORS

We, the undersigned inspectors, at the request of the Chief of the Department, accompanied Inspector D. T. Davis, to the Woodward colliery, No. 3 Shaft, No. 26 Slope, No. 1 West Hillman vein, of the Delaware, Lackawanna and Western Railroad Company, August 8, to investigate the cause of an explosion that had occurred that day. We entered the mine before all the bodies had been removed to the surface, and upon information from the colliery officials that the dead and injured had been removed from the section where the explosion occurred, we proceeded to make an investigation as to the cause of the accident.

When the explosion took place, the main current of air was short circuited, which allowed a large quantity of gas to accumulate in all portions of the slope workings. This gas was rapidly being removed by the use of boards and canvas, that were substituted in place of doors, and walls which had been destroyed by the force of the explosion.

After the gas had been removed we proceeded with our examination, and found that the explosion had taken place in No. 1 West Gangway, No. 26 Slope, Hillman vein. This slope, as shown by the map, is in an early stage of development and is double shifted throughout.

The records of the second assistant foreman in his early morning examination of this date show that he found the slope clear of gas, with the exception of a very small quantity that had accumulated in a crosscut in the lift above from where the explosion occurred. This was removed at 8.00 A. M. and the place made safe.

After our examination had been completed we decided to wait until the slope was placed in its original condition. On September 5, the work of reconstruction had been completed, and on September 6, accompanied by Mr. Henry G. Davis, Efficiency Engineer, Richards Thomas, Superintendent, and William White, Inside Foreman of the Woodward mine, we completed our investigation. We are unanimous in our opinions that the three main doors on the cutoff between the slope and slope airway, No. 1 West, No. 26 Slope, were responsible for the short circuiting of the air current, remaining open for such a length of time as to permit the air in No. 1 West Gangway to reach an explosive condition. As the percentage of gas in the air was gradually increasing, the intensity of the heat, due to the elongation of the flame, shattered the glass of Stanley Puzia's lamp, which permitted the flame to communicate with the external air, thereby causing the explosion.

No open lights are allowed in No. 3 Shaft. The employes working in the Hillman vein use nothing but safety lamps. The lamps used are the Wolf, Koehler and Kramer, with Pyro metal igniters and

magnetic lock. Monobel, a permissible explosive, is used for blasting and fired by an electric battery. We also suggested to the officials of the mine that some change should be made in the ventilating system. The officials looked with favor upon the suggestions, and decided to suspend operations in No. 26 Slope, Hillman Vein, until such time as required to complete the work.

Appended hereto are the mine tracings showing the location of the explosion.

D. T. DAVIS,
Inspector 12th District.
JOSEPH J. WALSH,
Inspector 14th District.
THOMAS J. WILLIAMS,
Inspector 11th District.
JOHN B. CORGAN,
Inspector 10th District.

VERDICT OF CORONER'S JURY

"The said Stanley Puzia came to his death by an explosion of gas which occurred in the Woodward Colliery of the Delaware, Lackawanna and Western Coal Company at Edwardsville Borough, Luzerne County, on the 8th day of August, 1916. The cause of the explosion is unknown to the jurors.

E. R. Morgan, John D. Williams, D. R. Lozo, James Williams, W. H. Chapin, Albert E. Miller, Jurors."

INCREASE IN INSPECTION FORCE

By the act of June 1, 1915, four inspectors were added to the force: Three in the first election district, Luzerne county, and one in the second election district, Lackawanna county. This increases the number of Inspectors from twenty-one to twenty-five. The new districts are Nos. 22, 23, 24 and 25. With an augmented inspection force, more frequent inspections can be made of the mines and it is the hope of the Department that there will be a decided decrease in casualties.

WORK OF THE MINE INSPECTORS

During the year they spent 4,526 days inspecting mines; 160 days inspecting machinery and plants; 407 days investigating accidents; 81 days attending inquests; 1,333 days at office work; 16½ days inspecting maps and plans; 465½ days in consultation on mining matters; 11 days in consultation on legal matters; 83 days traveling on duty; 99 days on sick list; 152 days legal holidays; 89½ days attending court; 15 days at mine fires; 164 days on Mine Foremen's Examining Boards; 36 days attending mine inspectors' examination;

25½ days attending funerals; 10 days sickness in families; 8 days on account of deaths in families; 123 days on vacation; 47 days on private business; a total of 7,852 days, or 314 days a year for each of the 25 inspectors.

PROPOSED MINING LEGISLATION

Electricity as a Power in Coal Mines

Although the Anthracite Mine Laws contain no provisions relating to the use of electricity in the mines, this power has been introduced in recent years for haulage, pumping, coal cutting and other purposes, and its use has resulted in a number of fatalities.

In view of this condition legislation to regulate the installation and use of electricity in and about the mines was recognized as a necessity and the Chief of the Department of Mines, with the assistance of an electrical expert, prepared a Bill and had it introduced in the legislature of 1917. The Bill was introduced April 16 and was known as House Bill No. 1491. It was referred to the Committee on Mines and Mining, and although persistent efforts were made to have a hearing on the Bill and to have it reported out, it remained in the Committee. The Bill is printed herewith so that the operators and miners will realize that an effort was made to give them better protection in the use of electricity. It seems, however, that both the operators and miners were opposed to the passage of the Bill.

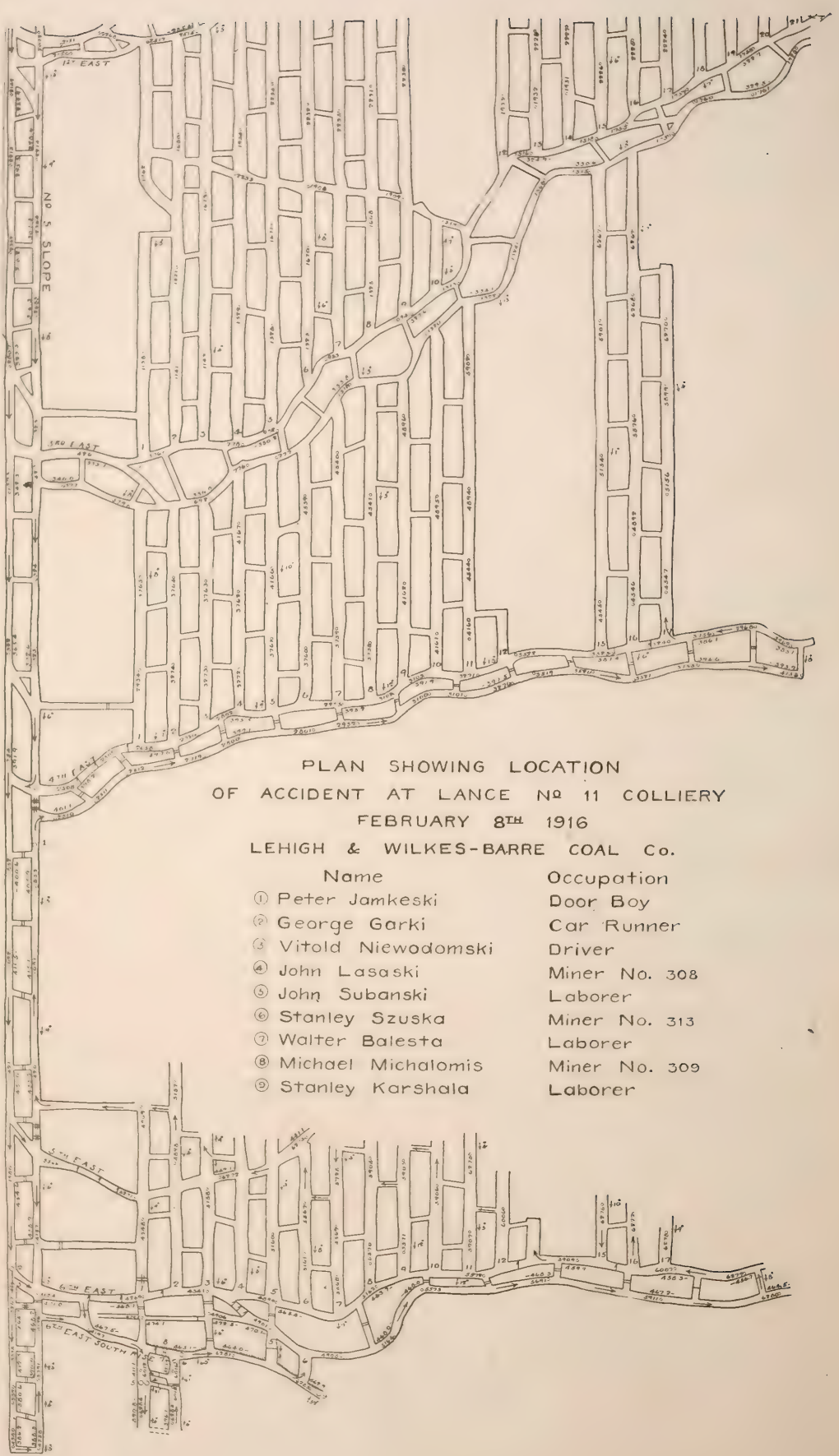
In this connection I desire to say to the opponents of the Bill that if the loss of life through defective installation or careless use of electrical apparatus continues, public opinion will no doubt insist that electricity in any form be prohibited in the anthracite mines.

"AN ACT

To provide for the safeguarding of the lives of employes in the coal mines of the Commonwealth of Pennsylvania

Section 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met and it is hereby enacted by the authority of the same, That on and after January one, one thousand nine hundred and nineteen, no electrically operated mining machine, locomotive or other portable or stationary motor shall be operated in any gaseous mine or gaseous portion of a mine, unless such motor, together with its controlling appliances and wiring, is totally enclosed or otherwise protected in such manner that they cannot ignite gas outside of the protective covering.

Section 2. All electric switches or current-rupturing devices used in a gaseous mine or gaseous portion of a mine shall be of an approved type and so constructed or enclosed that they cannot ignite gas outside of their enclosure.



PLAN SHOWING LOCATION
OF ACCIDENT AT LANCE Nº 11 COLLIERY
FEBRUARY 8TH 1916
LEHIGH & WILKES-BARRE COAL Co.

Name	Occupation
① Peter Jamkeski	Door Boy
② George Garki	Car Runner
③ Vitold Niewodomski	Driver
④ John Lasaski	Miner No. 308
⑤ John Subanski	Laborer
⑥ Stanley Szuska	Miner No. 313
⑦ Walter Balesta	Laborer
⑧ Michael Michalomis	Miner No. 309
⑨ Stanley Karshala	Laborer

Section 3. Only approved insulated wire or cable shall be used for carrying electricity in a gaseous mine or gaseous portion of a mine.

Section 4. No electrical equipment or wire or cable shall be used in any gaseous mine or gaseous portion of a mine until it has been approved by the Chief of the Department of Mines.

Section 5. Nothing in this act shall apply to any telephone or signalling wires or instruments as long as the conditions prescribed with reference to the installation and use of such wires and instruments are complied with, nor to any approved self-contained portable electric cap lamp or hand lamp.

Section 6. All acts or parts of acts inconsistent with the provisions of this act are hereby repealed."

First Aid Corps and Rescue Corps

It is generally conceded that first aid corps and rescue corps are a necessity, especially in and about coal mines. As a rule the more prominent coal companies have their own corps, which have proved of great value. The first aid corps have no doubt saved many lives and the rescue corps have been of great assistance when explosions occurred and during mine fires by reason of their ability to enter the mines even when very dangerous gas and smoke conditions exist.

Convinced that first aid corps and rescue corps are accomplishing a good work and with a desire to have them more generally established, the Department prepared a Bill and had it introduced into the Legislature April 18, 1917. It was referred to the Committee on Mines and Mining June 7. No special effort was made in support of the measure although the Department supposed that the workingmen interested would do everything possible to insure its passage. All attempts of the Chief of the Department to obtain a hearing on the Bill failed, and as very little interest was taken in it, the presumption is that both operators and miners were at least passively opposed to it. The Bill reads as follows:

"AN ACT

To provide and maintain first aid corps and rescue corps in the coal mines of the Commonwealth

Section 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met and it is hereby enacted by the authority of the same, That the superintendent of every mine shall provide one first aid corps if fifty to two hundred persons are employed inside, and he shall provide one additional first aid corps for every additional one person to two hundred persons employed inside.

Section 2. The superintendent of every gaseous mine where explosive gas is liberated in sufficient quantity to be detected by an approved safety lamp, shall provide one rescue corps if fifty to two hundred persons are employed inside, and he shall provide one additional rescue corps for every additional one person to two hundred persons employed inside.

Section 3. The superintendent of every mine employing less than fifty persons inside shall, upon request of the inspector in writing, provide a first aid corps and a rescue corps.

Section 4. Each first aid corps and each rescue corps shall consist of five strong and intelligent persons recruited from officials and volunteers among the employes after a medical examination, and shall be properly trained by those in charge of such work and paid at the usual rate of wages for the time spent in training.

Section 5. The superintendent of every mine where first aid corps and rescue corps are required shall establish a station, in which he shall provide and maintain in good working condition a sufficient number of rescue helmets of the most modern type and a sufficient supply of oxygen to enable the helmets to be in constant use for a period of forty-eight hours, a sufficient number of electric and approved safety lamps, resuscitating apparatus and all other appliances necessary in rescue work, and also facilities to transport promptly the equipment from the station to the place where it may be needed.

Section 6. A company or companies operating two or more mines where first aid corps and rescue corps are required may establish a central station, if the mines are located in a group and not more than five miles from the central station and are connected by telephone and telegraph. At each such station the superintendents of such mines shall provide and maintain in good working condition all the equipment required in section five of this act.

Section 7. The superintendents and the inspectors shall adopt such rules and regulations for the conduct and guidance of the persons employed in first aid and rescue work as may appear best for the good of the service.

Section 8. Any superintendent or other person who fails or neglects to comply with any of the provisions of this act shall be guilty of a misdemeanor, and upon conviction thereof in the court of quarter sessions shall be punished by a fine of not less than fifty dollars or more than two hundred and fifty dollars."

INSPECTION OF QUARRIES

While it is generally supposed that the Department of Mines has charge of or supervision over the slate, stone and other quarries of the State, no such power is given to the Department by existing legislation. With a view of ultimately bringing these industries under the jurisdiction of the Department, a resolution was passed by the Legislature of 1913 directing the Chief of the Department of Mines to investigate the conditions of the various quarries and report his findings to the Governor. The resolution reads as follows:

Resolved (if the House of Representatives concur), That the Chief of the Department of Mines is hereby authorized to examine into the condition and method of operation of the slate, stone, marble, and granite quarries, ore and clay banks, ore and graphite mines, and any other mineral operations of the Commonwealth; also to examine into the condition of the petroleum and natural gas-wells drilled

(f) A signalman shall be designated, who shall be at his proper place at all times when men are being lowered and hoisted. The signalman shall see that not more than six men are lowered or hoisted at one time and shall personally attend to the signals.
through the coal measures, and the method of drilling, casing and protecting said wells; and to make a report to the Governor, for transmission to the General Assembly of one thousand nine hundred and fifteen, covering said examinations and containing recommendations for legislation necessary to meet the existing conditions.

Owing to the illness of the Chief of the Department, the work of the investigation was only partially completed, but from the inspections he made it was evident to him that the employes of the quarries needed the protection that could only come through proper legislative action. A promise was made to the employes to take action in the matter and in fulfillment of the promise a Bill was prepared and introduced during the session of 1915. The Bill, however, did not please either the quarry employes or the quarry operators. It was looked upon as not drastic enough for the quarry employes and as entirely too drastic for the quarry operators, and the Bill failed of passage. Realizing, however, the importance of having State control of these industries, a similar Bill was introduced during the session of 1917, which also failed to be enacted into a law. The Bill reads as follows:

"AN ACT

Relating to and regulating the operation and inspection of quarries, imposing certain powers and duties upon the Department of Mines, and providing penalties for the violations of the provisions thereof.

Definitions

Section 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met and it is hereby enacted by the authority of the same, That for the purpose of this act the definitions of certain terms contained herein shall be as follows:

Quarry. Means an excavation or other open place in the earth from which stone is taken.

Operator. Means an individual, co-partnership, association or corporation operating a quarry.

Superintendent. Means the operator when acting as such or the person who shall on behalf of the operator have supervision over a quarry.

Foreman. Means the person placed in charge by the operator or superintendent of the operation of the quarry or any part thereof and of the employes thereof.

Inspector. Means a person appointed by the Chief of the Department of Mines to have supervision over quarries.

Section 2. The operator shall employ a superintendent. A superintendent may have charge of one or more than one quarry. Any individual operator or any member of a co-partnership or association may act as superintendent of his or its quarry.

The operator or superintendent shall employ a foreman for each quarry where more than five persons are employed.

Section 3. It shall be the duty of the foreman

(a) To employ competent persons to work in and about such quarry;

(b) To operate such quarry in such a manner as to insure the safety of all persons employed in or about the same;

(c) To make frequent inspections of the ends and sides of such quarry to ascertain the condition thereof;

(d) To take the necessary steps to prevent the ends and sides of any quarry from falling or sliding;

(e) To keep all means of ingress and egress to such quarry at all times in a safe condition and free and clear of all impediments and steam, so as to be at all times available in case the hoisting machinery is deranged;

(f) To prevent the construction or use of any track upon which blocks or boxes of loose material are landed at a closer distance than twenty feet to the edge of the quarry, unless a less distance is sanctioned by the inspector;

(g) To see that all tracks are so arranged that no material can fall into the quarry while blocks or other material are being landed;

(h) To see that all persons lowered and hoisted into and out of the quarry are lowered or hoisted in a box prepared for that purpose and equipped with a separate chain, made of the best quality of iron, fastened to the rope by means of a safety hook or swivel;

(i) To examine at least once each day all machinery and equipment used in hoisting and lowering men and to see that the same is in a safe condition;

(j) To prevent the use of the box and chain used for lowering and hoisting men for any other purpose;

(k) To see that an efficient brake is attached to every drum that is used in lowering or raising persons or material and that every such drum is provided with flanges of sufficient height to prevent the rope from slipping off;

(l) To see that the engineer in charge of the hoisting engine during the time any employes are below the surface is at all times within reach of the signal;

(m) To see that all explosives other than those in actual and necessary use in the quarry are kept locked in a wooden or metallic box and at least fifty feet from any place where actual operations are going on;

(n) To see that every engineer who lowers and hoists employes is at all times sober and trustworthy and at least twenty-one years of age.

Section 4. The following rules for the operation of a quarry are hereby enacted and adopted. The foreman is charged with the enforcement of these rules.

(a) Every engineer shall operate his engine with care when employes are lowered or hoisted.

(b) No rock or materials shall be hoisted except in a box or by a chain provided for that purpose, which box and chain shall be connected to the rope by means of a safety hook or clevis.

(c) No person shall work under loose or dangerous material except for the purpose of pulling the same down.

(d) No iron or steel tamping bar shall be used unless the end thereof is tipped with at least six inches of copper or some other soft material.

(e) No hole that has misfired shall be reopened.

(f) A signalman shall be designated who shall be at his proper place at all times when men are being lowered and hoisted. The signalman shall see that not more than six men are lowered or hoisted at one time and shall personally attend to the signals.

(g) An empty trip shall be lowered and hoisted each morning and at noon before any employes are lowered.

(h) When a blast is about to be fired the person in charge thereof shall, both before and after igniting the match or before firing the charge if fired by electricity, give ample warning to all persons who may be in danger therefrom.

(i) After each blast the chargeman shall examine the ridge or ledge, and if there is any doubt whether all the charges have been exploded no employes shall be permitted to work if in any danger from such unexploded charge, until said charge is exploded in such manner as shall be directed by the foreman.

Section 5. The superintendent or operator shall provide every quarry with two stretchers constructed of such material and in such manner as to afford the greatest ease in the conveying of injured persons. The removal of any injured employe shall be effected by the quickest and most convenient means.

Section 6. The operator or superintendent shall provide and keep ready and in a sanitary condition an ample supply of linen, bandages, absorbent cotton and antiseptics, and all such other drugs, things and materials as may be necessary to render first aid to the injured.

Section 7. The operator and the superintendent shall see that the duties herein required of the foreman are faithfully performed.

Section 8. A copy of this act, together with such additional rules and regulations as may be prescribed by the operator, shall be posted in some conspicuous place near the quarry, and the same shall be replaced whenever they become obliterated or destroyed.

Section 9. All quarries of whatever nature shall be under the supervision of the Department of Mines. The Chief of the Department shall name a sufficient number of inspectors to inspect all quarries and to see that the provisions of this act are complied with. Each inspector shall be a citizen of this Commonwealth and shall have attained the age of thirty years and shall have had five years' practical experience as quarryman in this State. Each quarry inspector shall receive an annual salary of eighteen hundred dollars. All necessary expenses incurred by an inspector in performing his duties shall be allowed and paid on the approval of the Chief of the Department of Mines.

Section 10. Any person who violates or refuses or neglects to comply with any of the provisions of this act, or who refuses or neglects to enforce any of the provisions of this act the enforcement of which is charged to such person, shall be guilty of a misdemeanor and upon conviction thereof shall be sentenced to pay a fine of not less than twenty-five dollars or more than five hundred dollars, or to undergo imprisonment not exceeding six months, or both, at the discretion of the court.

Section 11. All acts and parts of acts inconsistent with this act are hereby repealed."

INSPECTION OF CLAY, ORE AND GRAPHITE MINES.

As there are a number of clay, ore and graphite mines in this State that should be placed under the supervision of the Department

of Mines, the Department prepared a Bill for that purpose. It was introduced in the last session of the Legislature, but failed of passage. The Bill reads as follows:

"AN ACT

To provide for the health and safety of persons employed in and about the clay, ore and graphite mines of Pennsylvania and for the inspection thereof.

Section 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met and it is hereby enacted by the authority of the same, That for the purposes of this act the terms and definitions contained herein shall be as follows:

The term "mine" shall mean every operation and work, both under ground and above ground, used or to be used for the purpose of producing clay, ore or graphite.

The terms "owners" and "operators" shall mean any person, copartnership, association or corporation who is the immediate proprietor or lessee or occupier of any mine or part thereof.

The term "superintendent" shall mean the person who shall have on behalf of the owner general supervision of one or more mines.

The term "inside foreman" shall mean the person whom the operator shall place in charge of the inside workings of the mine or any part thereof and of the persons employed therein.

The term "miner" shall mean any employe actually engaged in the operation of a mine.

The term "inspector" shall mean any person appointed by the Chief of the Department with the consent of the Governor.

Section 2. Hereafter the Department of Mines of the Commonwealth of Pennsylvania shall have supervision over all clay, ore and graphite mines operated in this Commonwealth.

Section 3. The mines shall be subject to the rules and regulations herein prescribed or that may hereafter be prescribed, as well as to those recommended by the Chief of the Department of Mines.

Section 4. A competent inside foreman shall be appointed by the operator or superintendent in all mines employing ten or more miners. He shall devote his entire time to his duties when the mine is in operation.

Section 5. The superintendent of every mine shall provide and maintain a constant and adequate supply of pure air for the employes. The air shall be so conducted throughout the mine and in sufficient quantities as to dilute, carry off and render harmless all smoke and noxious and dangerous gases generated therein.

Section 6. No furnace for conducting air shall be used in any mine wherein explosive gas is generated.

Section 7. The minimum quantity of air provided in any mine shall not be less than two hundred cubic feet per minute for each person employed therein and as much more as may be required by the inspector.

Section 8. Every mine in which more than fifty miners and miners' laborers are employed shall be divided into districts. Each district shall be provided with a separate split of pure air, and the ventilation shall be so arranged that not more than fifty miners and miners' laborers are employed at the same time in any one split.

Section 9. The air passage in every mine shall be of area sufficient to allow for the circulation of not less than two hundred cubic feet of air per minute for every person working therein or in any section thereof.

Section 10. All permanent ventilators shall be erected on the surface and shall be kept continually in operation at the speed established by the inspector and shall not be stopped except upon the written consent of the superintendent. Whenever considered necessary by the inside foreman a temporary ventilator may be erected inside the mine.

Section 11. Every ventilator in operation at a mine shall be provided with a recording instrument by which the speed of the ventilator or the ventilating pressure for each hour of every day is indicated, with the date thereof, and such record shall be preserved in the office of the superintendent for a period of one year. The superintendent is charged with the duty of enforcing the provisions of this act relating to ventilation, and failure so to do shall constitute an offense against this act.

Section 12. The Chief of the Department of Mines, with the consent of the Governor, shall appoint one or more inspectors whose sole duty shall be to inspect the mines in the district or districts over which he is appointed and to enforce the provisions of this act. Every inspector before appointment shall have had at least five years' practical experience in and about clay, ore or graphite mines, as the case may be.

Section 13. Each inspector shall from time to time make such report or reports as the Chief of the Department of Mines may require.

Section 14. The salary of each inspector appointed as herein provided shall be eighteen hundred dollars ($1,800) per annum, which salary, together with the expenses incurred for carrying into effect the provisions of this act, shall be paid by the State Treasurer upon the warrant of the Auditor General.

Section 15. Any person violating any of the provisions of this act shall be guilty of a misdemeanor and upon conviction shall be punished by a fine not exceeding three hundred dollars, or by imprisonment for a period not exceeding three months, or both, at the discretion of the court.

Section 16. All acts or parts of acts inconsistent with the provisions of this act are hereby repealed."

THE ANTHRACITE MINE LAWS

A great necessity exists for an amendment to the present anthracite law of 1891. My experience of eighteen years as Chief of the Bureau of Mines, and since 1903 of the Department of Mines, has made it evident to me that the anthracite mine law needs amendment. With the object of bringing about this important reform, I had a Mine Code introduced into the last session of the House. It was severely criticized and by some persons was stigmatized as a "One Man's Code." This statement, like most of the statements regarding the measure, was not true.

The Code contains all the good points of the present anthracite law, as well as the good points contained in the report of the Commission appointed in 1913 to amend the law, and also such additional provisions as seemed wise and necessary. The Code is not perfect in its present form, but the reason is partly due to the fact that the wishes of the mine workers, operators and inspectors had to be considered in framing it.

After the Bill was introduced, it was found that the Mine Workers and operators were both against any changes in the present law, although they gave no valid reason for their opposition to the proposed Code. Some of the Inspectors were also unfavorable to the adoption of the measure. Undoubtedly the anthracite mine law will be amended at some time in the future, probably by a commission, and for the information of those who undertake the work, the Code presented to the last Legislature is printed herewith. It is also hoped that all classes employed in and about the mines may read the Bill and become familiar with its various provisions so that they can judge of its merits.

I am not making any defence of any particular article, but feel it my duty to explain my reason for suggesting section 196 of Article 9, which reads as follows:

"Any person who has passed two consecutive examinations for the office of inspector and has served as an inspector continuously for eight years shall be exempt from taking any further examination and shall continue in said office without any further examination unless removed or suspended."

During the Session of 1915, Section 4 of Article 19 of the Bituminous Code was amended to cover this question. The amendment reads as follows:

"Any person who has served as a mine inspector, continuously for eight years, and has passed two consecutive examinations, for the office of mine inspector, shall be exempt from taking any further examination, and shall continue in said office without any further examination unless removed or suspended, as provided by article twenty-one of the act of June 9, one thousand nine hundred and eleven (Pamphlet Laws, seven hundred and fifty-six) and section four of the act of April fourteen, one thousand nine hundred and three (Pamphlet Laws, one hundred and eighty)."

Fully appreciating the wisdom of this provision, I prepared section 196 with a view of bringing about a similar reform in the anthracite region.

The proposed Anthracite Code reads as follows:

"AN ACT

To provide for the health and safety of persons employed in and about the Anthracite Coal Mines of the Commonwealth of Pennsylvania, for the protection and preservation of property connected therewith, for investigations and inquests after accidents, defining the duties of employes and employers, and prescribing penalties for violations of this act.

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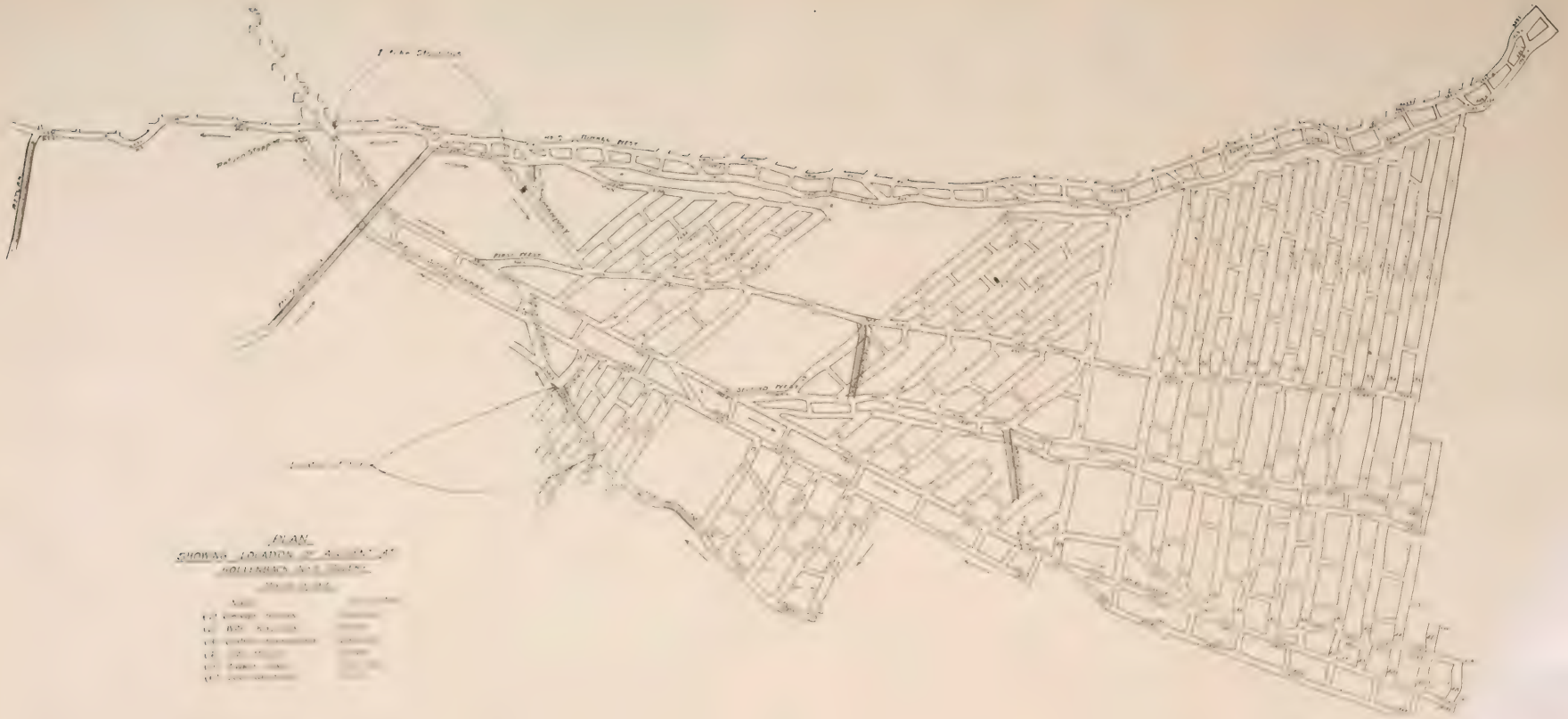

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ARTICLE I

Application of Act

Section 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met, and it is hereby enacted by the authority of the same, That the provisions of this act shall apply to every anthracite coal mine or colliery in this Commonwealth where ten or more persons are employed in inside workings.

ARTICLE II

Definition of Terms

Section 10. For the purpose of this act the definitions of certain terms contained herein shall be as follows:

Colliery. The term "colliery" means all the inside workings of a mine or mines, together with the outside operations connected therewith.

Mine. The term "mine" means all inside workings and excavations, including shafts, slopes, drifts, tunnels and all other openings penetrating a coal seam, together with all roads, appliances, machinery and materials below the surface; also all shafts, drifts, slopes, tunnels and all other openings being sunk or driven which are tributary to one colliery and ventilated by one general air current or division thereof and connected by one general system over which coal is delivered to one or more points outside the mine, when such is operated by one operator.

Shaft. The term "shaft" means a vertical opening through the strata that is used for the purpose of ventilation and drainage and for the hoisting of men and material in connection with the mining of coal.

Slope. The term "slope" means an incline opening used for the same purposes as a shaft.

Workings. The term "workings" means all the excavated parts of a mine below the surface including those abandoned as well as those being worked.

Working Place. The term "working place" means a gangway, airway, breast, pillar, cross-heading or any other place where coal is being mined or where men are employed below the surface.

Approved Safety Lamp. The term "approved safety lamp" means any make of safety lamp approved by the Chief of the Department of Mines.

Breaker. The term "breaker" means the structure containing the machinery used for the preparation of coal.

Operator. The term "operator" means any copartnership, association, corporation or individual, operating any colliery or mine or any part of any colliery or mine as owner, occupier or lessee.

Superintendent. The term "superintendent" means the person who shall have supervision of one or more mines or collieries on behalf of the operator.

Mine Foreman. The term "mine foreman" means the person who is in charge of the inside workings and the inside employes of a mine or mines.

Mining Engineer. The term "mining engineer" means any person who is competent to survey and plot accurately the inside workings of a mine as well as the surface topography, and who has had five years' practical experience at such work, or any person who is a graduate of a school of mines or some similar institution and who has had three years' practical experience at such work.

Miner. The term "miner" means the person who blasts or cuts coal or rock at the face of the gangway, airway, breast, pillar or other working place, and also any person engaged at general work in a mine and qualified to do the work of a miner.

Outside Foreman. The term "outside foreman" means the person in charge of all the outside operations of a colliery and of the persons employed thereat.

Inspector. The term "inspector" means the person appointed and commissioned by the Governor on behalf of the Commonwealth to have the inspection and supervision of mines and collieries in the district allotted to him.

ARTICLE III

Duties of Owner, Operator and Superintendent

Section 20. The owner or operator of every colliery shall appoint a person to be known as the superintendent. Any individual operator or any member of a corporation, copartnership or association operating any colliery may act as superintendent of his or its respective colliery or collieries.

Section 21. Whenever the superintendent cannot personally comply with the provisions of this act he shall employ a sufficient number of assistants, who shall be liable to the same penalties as the superintendent for any violation of this act.

Section 22. The superintendent shall use every precaution to insure the health and safety of the employes in all cases, whether or not covered by the provisions of this act, and shall have supervision, direction and control of the mine foremen and all other officials.

Section 23. The owner, operator or superintendent of every mine shall appoint a certificated mine foreman or a person who in the judgment of the employer is possessed of qualifications which make him equally competent to act as mine foreman. A mine foreman may have charge of several detached openings of the same colliery. No mine shall be operated for a longer period than thirty days without the supervision of a mine foreman. In case any mine is worked a longer period than thirty days without a mine foreman, the owner, operator or superintendent thereof shall be subjected to a penalty of twenty dollars per day for each day over the said thirty days during which the said mine is operated.

Section 24. The superintendent and the mine foreman shall employ a sufficient number of assistant mine foremen, and if the mine is liberating explosive gas in quantities sufficient to be detected by an approved safety lamp, they shall also employ a sufficient number of fire bosses to enforce the provisions of this act.

Section 25. The mine foreman and assistant mine foreman and fire boss and any other person placed in charge of any mine or col-

liery or any part of any mine or colliery, shall be the agents of the owner or operator, as the case may be, and may be employed and discharged at will by said owner or operator.

Section 26. The superintendent shall employ a competent person as outside foreman, who shall have charge of the breaker and the outside operations of a colliery and of the persons employed thereat. The superintendent may, on the written permission of the inspector of the district, act in the capacity of outside foreman when the circumstances will permit of such an arrangement.

Section 27. The superintendent shall see that all officials employed under him comply with all the provisions of this act, and he and such other officials shall comply with all orders and requests of the inspector.

Section 28. The operator or superintendent shall provide and maintain at or near the main entrance to each mine an office to be known as the mine foreman's office, which shall be of sufficient size and dimensions to properly store and care for the maps and records required by this act.

Section 29. The superintendent shall at least once each week read and carefully examine and countersign all the reports entered in the record book of the mine foreman. If the superintendent finds therefrom that any of the provisions of this act are being violated, he shall at once call the attention of the mine foreman to that fact and shall order and see that such provisions are complied with forthwith.

Section 30. The superintendent shall provide and maintain means of ventilation ample at all times to furnish a constant and adequate supply of pure air for all persons and animals in the mine.

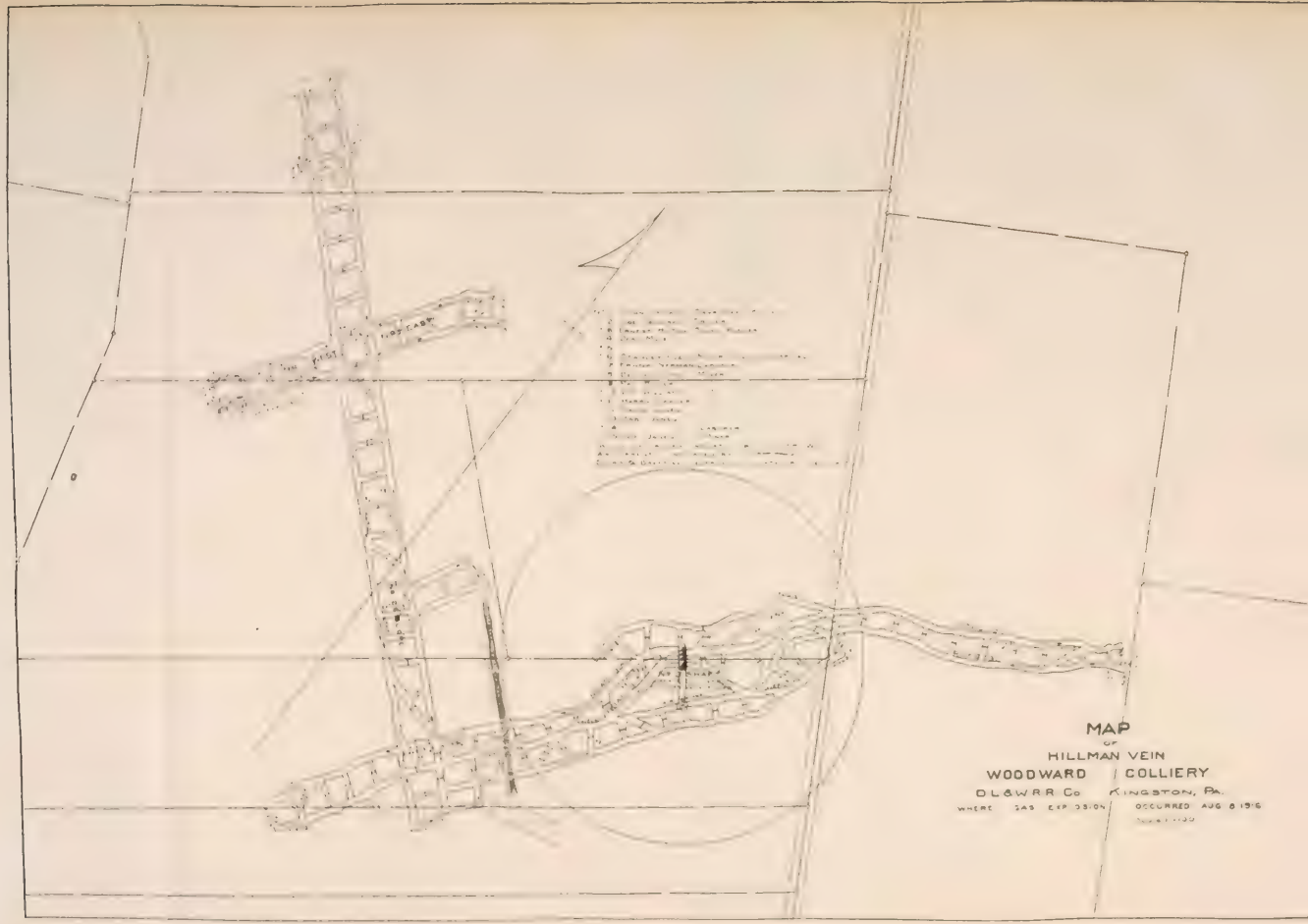
Section 31. The superintendent shall, on behalf and at the expense of the operator, keep on hand at each mine a sufficient quantity of materials and supplies required to preserve the health and safety of the employes as provided by this act.

Section 32. The superintendent shall provide the necessary number of danger signals, which signals shall be uniform and shall be designed by the Chief of the Department of Mines.

Section 33. The superintendent shall keep on hand at the mine a supply of printed rules and record books required by this act, which shall be furnished through the inspector on request in writing of the superintendent. The superintendent shall see that said rules and record books are delivered to the proper persons and that an abstract in legible characters of that portion of this act known as General Rules and Special Rules is posted in conspicuous places near the main entrance or checking station of the mine, and is protected and renewed when necessary.

Section 34. The superintendent shall cause to be placed at each colliery an accurate self recording barometer, and the record associated each day shall be preserved in the superintendent's office.

Section 35. The superintendent shall prevent the use of mine cars or motors inside or outside of any mine unless the bumpers on the cars and motors are of sufficient length and width to keep the bodies of the cars or motors separated by not less than twelve inches when the cars or motors stand on a straight level road and the bumpers touch each other.


MAP
OF
HILLMAN VEIN
WOODWARD COLLIERY
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WHERE GAS EXPLOSION OCCURRED AUG 8 1916

Section 36. The operator or superintendent shall provide and maintain at or near the entrance of every mine where one hundred or more persons are employed inside a suitable building of ample dimensions to shelter employes from the weather while waiting to be lowered into the mine.

Section 37. The superintendent of every mine shall see that all engine houses where an engineer or engineers are employed are kept at a temperature of from seventy to eighty-five degrees Fahrenheit, and that boiler houses where firemen are employed shall be kept at a temperature below ninety degrees Fahrenheit at all times.

Section 38. The operator or superintendent of every gaseous mine where two hundred or more persons are employed inside, and of any other mine when requested by the inspector in writing, shall make or cause to be made an analysis of the return air in each split. The analysis shall be made the first week of each month, and the result shall be sent promptly to the inspector on blank forms furnished by the Department of Mines, giving the name of the person who took the sample and the name of the chemist. When the analysis of the return air shows over one per cent. of methane, the superintendent shall order that the mine or that portion of the mine shall be worked by the use of approved locked safety lamps only.

Section 39. The superintendent shall notify the inspector forthwith by telephone or telegraph or special messenger of any loss of life or of any serious accident inside or outside of a mine whereby the lives of the employes are endangered.

Section 40. The superintendent shall forthwith notify the inspector of any of the following occurrences:

(a) Any serious fire;

(b) The encountering of a dangerous body of gas;

(c) The occurring of any squeeze or any other cause that may endanger the safety of the employes.

Section 41. The superintendent shall notify the inspector within fifteen days of any of the following occurrences:

(a) The commencement of any work for the purpose of opening a new mine;

(b) The resumption of the working of a mine after an abandonment or a discontinuance for a period exceeding sixty days;

(c) The abandonment of any mine or the discontinuance of any working thereof;

(d) Any change in the name of a colliery or mine or in the name of the operator of any colliery or mine;

(e) The commencement of removal of any pillars.

Section 42. The superintendent on or before the twenty-fifth day of January in each year shall send to the inspector a correct report of the year ending December thirty-first, which report shall contain:

(a) The name of the operator;

(b) The names of the officials of each colliery;

(c) The tons of coal mined;

(d) The quantity of black powder, dynamite and permissible explosives used;

(e) The number of persons employed inside and outside of each colliery, stating specifically those between the ages of fourteen and sixteen years and those between the ages of sixteen and twenty-one years and those above twenty-one years, separately, and classifying the occupations of persons so employed.

(f) The number of days each breaker has been in operation.

The reports shall be in such form and on such blanks and shall give such other information regarding the mine or colliery as may be from time to time required and prescribed by the Chief of the Department of Mines.

Section 43. Any owner, operator, superintendent or other person who violates any of the provisions of this article shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than one hundred dollars or more than five hundred dollars, or by imprisonment not exceeding three months, or both, at the discretion of the court.

ARTICLE IV

Mine Maps

Section 50. The operator or superintendent of every mine shall make or cause to be made by a competent mining engineer an accurate map of the mine on a scale of one hundred feet to the inch, which map shall be kept in the main office and shall show the following:

(a) All the openings, excavations, shafts, slopes, drifts, tunnels, planes, gangways, airways, and breasts, and the name or number of each;

(b) An accurate delineation of the boundary lines between said mine and all adjoining mines or coal lands;

(c) The relation and proximity of the workings of said mine in all seams to all adjoining mines and seams and coal lands;

(d) If requested by the inspector, the map in the office at the mine shall show by arrows the direction of the air currents in the mine with each split shown in different color;

(e) The elevation above or below mean tide of the top and bottom of each shaft, slope, drift, tunnel, plane and gangway and also of all breasts adjacent to the boundary lines between said mine and any adjoining mine at points not more than three hundred feet apart;

(f) The location of any bodies of water on the surface, with their elevation accurately and plainly marked;

(g) The location and elevation of any body of water dammed in the mine, giving the true area of such body of water unless inaccessible before the passage of this act;

(h) The location and number of all bore holes penetrating the coal strata, vertical sections of which shall be furnished to the inspector upon written request to the superintendent.

Section 51. A true copy of the map shall be kept in the mine foreman's office for the use of the mine officials and the inspector. Said copy shall also be subject to the inspection (in the presence of the mine foreman), of any person working in the mine whenever such person fears that his working place is becoming dangerous by reason of its proximity to other workings.

Section 52. At least once every six months the superintendent of every mine shall cause to be accurately entered on the original map and on the copy in the mine foreman's office all the excavations made in the mine during the time that has elapsed since the excavations were last shown thereon.

Section 53. The superintendent of every mine shall furnish the inspector with a true and correct copy on tracing cloth of the afore-

said original map, and at the end of every six months thereafter the inspector shall present said copy to the superintendent, who shall place or cause to be placed thereon all the excavations made during the preceding six months as provided for in section fifty-two of this article, and return the map to the inspector within thirty days from the time of receiving it. In lieu of the map on tracing cloth the superintendent may furnish a blue print showing the complete workings of the mine. When more than one seam of coal is being worked in any mine the inspector shall be provided with a separate copy on tracing cloth or a blue print of the complete workings of each seam. The copies of the maps furnished to the inspector shall remain in his care as official records and shall be transferred by him to his successor in office. In no case shall any copy thereof be made without the consent of the superintendent in writing.

Section 54. The inspector's map of any particular mine shall be subject to inspection in the presence of the inspector by any person interested.

Section 55. The superintendent, at the request of the inspector in writing, shall order that any portion of a mine be surveyed and entered on the original map and on the copy at the mine foreman's office and on the inspector's copy, when in the inspector's opinion such portion of the mine is approaching accumulations of water, noxious gases or any other danger.

Section 56. Whenever any of the workings have been driven to their destination the superintendent shall see that the mining engineer checks up all his previous work and notes, and he (the mining engineer), shall certify that the map shows correctly all the excavations made in said mine.

Section 57. Whenever a mine or a portion thereof is worked out the superintendent shall forthwith have the inspector's map extended to show clearly all the worked-out or abandoned territory, with all boundary lines and elevations as required by the first section of this article.

Section 58. The owner, operator or superintendent of an abandoned mine shall also, within thirty days after its abandonment, send to the Department of Mines a complete tracing of the original map, which shall be kept in the department as a public document. The mining engineer making such tracing shall certify that it is a true and correct copy of the original map and that the original map shows a true, complete and correct survey of all the excavations made in the abandoned mine.

Section 59. If the inspector shall have reason to believe that the map of any mine or portion of a mine furnished him in pursuance of the provisions of this article is inaccurate, he may have a special survey made and also a new map of the mine. The cost of the survey and map shall be recoverable by the inspector from the owner or operator as other debts are by law recoverable, unless it is found that the map furnished to the inspector was sufficiently accurate to serve the purpose for which it is intended, in which case the Commonwealth shall be liable for the cost incurred in making the survey and map, which shall be paid by the State Treasurer upon warrant of the Auditor General drawn upon presentation of voucher approved by the Chief of the Department of Mines.

Section 60. Any owner, operator or superintendent, who wilfully or knowingly or designedly furnishes, or causes or allows an incorrect map to be furnished, shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than five hundred dollars or more than five thousand dollars, at the discretion of the court.

Section 61. Any person, copartnership, association or corporation refusing or neglecting or failing to comply with any of the provisions of this article shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than two hundred dollars or more than five hundred dollars, or such person or any member of such copartnership or association, or any officer or director of such corporation, with knowledge of the same, may be imprisoned for a period of not less than ten days or more than thirty days, or both, at the discretion of the court.

ARTICLE V

Boards to Examine Applicants for Certificates of Qualification as Mine Foremen, Assistant Mine Foremen and Fire Bosses

Section 70. On or before the third Tuesday in January in each year the courts of common pleas of the counties of Luzerne, Lackawanna and Schuylkill, shall appoint for each inspection district of their respective counties a miner and a superintendent, who shall be residents of the inspection district and citizens of this Commonwealth, and who, together with the inspector of the district shall compose the Mine Foremen's Examining Board. The inspector shall be the chairman of the board. The miner appointed shall have had at least five years' practical experience as a miner in gaseous mines, and the superintendent shall have had at least three years' experience as a superintendent of gaseous mines. Each member shall take and subscribe to the following oath before an officer authorized to administer oaths, namely:

"I do solemnly swear (or affirm) that I will discharge the duties of my office with fidelity; that I have not paid or contributed or promised to pay or contribute either directly or indirectly any money or other valuable thing to procure my appointment; that I will not knowingly receive directly or indirectly any money or other valuable thing for the performance or non-performance of any act or duty pertaining to my office other than the compensation allowed by law."

Section 71. Any vacancy that may occur in the membership of a mine foremen's examining board shall be filled for the unexpired term by the authority making the appointment in the first instance.

Section 72. The several boards shall meet in the city of Hazleton each year, on the third Tuesday of March, for the purpose of discussing the nature and scope of the questions to be given the applicants and to adopt rules to govern the examinations, and to discuss any other important matter pertaining to their duties.

Section 73. At such meeting the boards shall select a committee of six of their number composed of two inspectors, two miners and two superintendents. The committee shall meet in the city of Wilkes-Barre on the third Tuesday in April to formulate a code of questions to be used at the examinations. This committee shall select one of

their number as chairman and one as secretary. The questions prepared by the committee shall be printed under the personal direction of the chairman and shall be sent by him by registered mail, in sealed packages, each package containing a set of questions for each session, to the chairman of each board, who shall break the seal and open the package at the commencement of each session in the presence of the applicants and the other members of the board.

Section 74. The boards shall meet in their respective districts at the call of the chairman, on the second Tuesday in May, at a place designated by them, to examine applicants for certificates of qualification as mine foremen, assistant mine foremen and fire bosses. Public notice of the examinations shall be posted for two weeks prior thereto at each mine in the district.

Section 75. After the examinations are over and before the boards meet to examine the papers of the applicants, and not later than seven days after such examinations, the committee of six shall again meet in the city of Wilkes-Barre to prepare answers to the questions propounded. The answers shall be printed and sent by registered mail to the chairman of each board and shall be used in rating the value of the answers to the questions as given by the applicants. In the preparation of answers to the questions the committee may engage the services of a stenographer, whose compensation and mileage shall be the same as that of the members of the committee.

Section 76. Applicants must appear before the board of the district in which they work. All persons who desire to attend the examination shall notify the chairman of the board of their intention so to do, if possible, not less than six days prior to the examination.

Section 77. Applicants for certificates of qualification as mine foremen, assistant mine foremen and fire bosses shall be citizens of this Commonwealth, at least twenty-three years of age, and shall have had at least five years' practical experience, after sixteen years of age, as miners or men of general work in the anthracite mines of Pennsylvania.

Section 78. All applicants shall be able to read and write the English language intelligently and shall furnish the board with certificates from trustworthy persons as to their character and temperate habits, and also certificates from superintendents or mine foremen showing the length of their service as miners in the different mines.

Section 79. Certificates of qualification as mine foremen shall be granted to persons who have given to the board satisfactory evidence of their ability to perform the duties of a mine foreman, and who shall have received an average of at least eighty per centum in the examination.

Section 80. Certificates of qualification as assistant mine foremen shall be granted to persons who have given to the board satisfactory evidence of their ability to perform the duties of an assistant mine foreman, and who shall have received an average of at least seventy per centum in the examination.

Section 81. Certificates of qualification as fire bosses shall be granted to persons who have given to the board satisfactory evidence of their ability to perform the duties of a fire boss, and who shall have received an average of at least sixty per centum in the examination.

Section 82. All applicants for certificates as mine foremen, assistant mine foremen and fire bosses must also undergo an oral examination as to their practical experience in mines and with explosive and noxious gases found in mines.

Section 83. Before such examination each applicant shall pay to the board the sum of one dollar, and, if successful, two dollars additional for a certificate. All moneys received by the board shall be transmitted to the Chief of the Department of Mines, who shall pay the same into the State Treasury less the cost of issuing and recording the certificates.

Section 84. Each board, or at least two members thereof, shall certify to the Chief of the Department of Mines, on forms furnished by him, the name of every person whose examination shall disclose his fitness for the duties of mine foreman, assistant mine foreman or fire boss. The Chief of the Department of Mines shall prepare certificates of qualification for the successful applicants and send them to the inspector for distribution. Each certificate shall contain the full name, age and place of birth of applicant, and also the length and nature of his previous service in or about the mines. The certificates shall be in manner and form as prescribed by the Department of Mines.

Section 85. The chairman of each board shall send to the Department of Mines, to be filed therein, the answers of each applicant to the questions propounded, with all other papers, together with the tally sheets, and also a list of the questions and answers as prepared by the committee of six.

Section 86. No person shall act as mine foreman of any coal mine unless he is registered as a holder of a certificate of qualification required by this article, or unless in the judgment of the employer he is a person possessed of qualifications which make him equally competent to act in such position.

Section 87. In case of the loss or destruction of a certificate the Chief of the Department of Mines shall, on payment of the sum of one dollar, issue a duplicate thereof to the person losing the same. In any such case proof shall be submitted satisfactory to the Chief of the Department of Mines that such loss or destruction has actually occurred.

Section 88. The members of each board, except the inspectors, shall each receive six dollars a day for every day actually employed, not exceeding twelve days in all, and mileage at the rate of two and one-half cents a mile for every mile traveled by the shortest route in going to and from the place of meeting: Provided, That mileage shall be paid but once for each continuous session of the board, and by a continuous session is meant a session of not less than three days in each week. The members of the committee of six, except the inspectors, shall each receive additional compensation at the rate of six dollars a day for the time spent in preparing the questions and answers, together with mileage as hereinbefore provided, and all other necessary expenses.

Section 89. The chairman of each board shall, on final adjournment, send to the Chief of the Department of Mines properly attested vouchers for compensation and mileage of each member of the board.

The Chief of the Department shall approve all proper vouchers and transmit them to the Auditor General, who shall issue a warrant for their payment to the State Treasurer.

Section 90. Any member of any Mine Foremen's Examining Board who divulges or makes known any question prepared for an examination prior to the time when such questions are handed to the applicants at the examination, or in any manner unlawfully assists an applicant to pass an examination, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than fifty dollars or more than two hundred and fifty dollars, at the discretion of the court.

Section 91. Any person who shall forge a certificate or unlawfully copy or duplicate a certificate, or knowingly or wilfully make or cause to be made any false statement in procuring a certificate issued under this article, or who shall make use of any forged or false certificate or duplicate thereof, or who shall make use of any false declaration, representation or statement in any certificate or duplicate thereof or any document relating thereto, shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than fifty dollars or more than two hundred dollars or by imprisonment not exceeding thirty days, or both, at the discretion of the court.

Section 92. Any person who neglects or fails to comply with any of the provisions of this article shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than fifty dollars or more than two hundred and fifty dollars or by imprisonment not exceeding thirty days, or both, at the discretion of the court.

ARTICLE VI

Duties of Mine Foreman

Section 100. Every mine shall be under the direction of a mine foreman, who shall have full charge of all inside workings and of all the persons employed therein. He shall comply with the provisions of this act so far as they relate to his own duties and shall see that the regulations prescribed for all officials and for each class of workmen under him are complied with. A mine foreman may have charge of several detached openings of the same colliery.

Section 101. The mine foreman shall examine every working place between the hours of seven-thirty and twelve ante meridian and one and four-thirty post meridian each day when the mine is in operation, and shall give special care and attention to miners engaged in removing pillars.

Section 102. The mine foreman shall each day enter plainly with ink in a book provided for that purpose a brief report of the condition of each portion of the mine examined by him, and shall state clearly any danger that may have come under his observation, and sign his name to the report.

Section 103. The mine foreman shall have charge of all matters pertaining to ventilation and the regulation of the speed of the ventilator shall be under his charge and direction. He shall post a notice at the fan engine house stating the minimum number of revolutions per minute the ventilator shall run.

Section 104. The mine foreman shall, on the first Monday of each week or as soon thereafter as practicable, when the mine is in operation, measure the air current at or near the main inlet and main outlet, and in the main inlet and outlet of each split, and in the cross-heading nearest the face of the first inside working breast, and in the inside cross-heading nearest the face of the last outside working breast, and in the last cross-heading between gangway and airway of each split of air. He shall make a record of such measurements with ink in a book provided for that purpose. The record shall also designate the area of each opening, the velocity of the air therein, and the number of persons employed in each split of air, with dates when the measurements were taken. An exact copy of the measurements and records shall be sent to the inspector not later than the eighth day of the following month.

Section 105. The mine foreman shall, while the mine is in operation, keep a careful watch over the ventilation, airways, travelingways, timbering and drainage, and shall see that all stoppings between gangways and airways are properly built as provided for in section two hundred and eighty-three of article fourteen of this act. He shall see that proper cross-headings are made in pillars of all breasts and gangways, at such distance apart as in his judgment may be necessary, but the face of any breast shall not be more than sixty feet distant from the gangway or last cross-heading, and the face of any gangway shall not be more than sixty feet from the last cross-heading. He shall see that cross-headings are closed when necessary or when ordered closed by the inspector in writing, and that in gaseous mines a cross-heading is driven at the face of every breast when finished.

Section 106. The mine foreman or the assistant mine foreman shall once each week carefully examine all accessible parts of abandoned portions of a mine where explosive gas has been or is being liberated, and all dangers found therein shall be immediately removed if practicable. If found impracticable to remove said dangers, the mine foreman shall immediately notify the inspector. A report of said examination shall be recorded with ink in a book kept in the mine foreman's office and signed by the person making the examination.

Section 107. The mine foreman shall direct and see that every working place is properly secured by props, timbers or otherwise. He shall not permit any person to work in an unsafe place unless for the purpose of making it safe, and shall take all necessary steps to assure safety. If any employe neglects to carry out or disobeys the directions given in regard to securing his working place and through his negligence or disobedience serious injury or loss of life results, the mine foreman shall report such employe to the inspector for prosecution.

Section 108. The mine foreman shall see that the miners are provided with the necessary props, timbers and cap pieces of suitable sizes when ordered, which shall be delivered at the working faces or as near thereto as they can be conveyed in mine cars, and shall see that the props are cut square on one end and as near as practicable to the proper length as given by the miner. If such props, timbers and cap-pieces cannot be provided, the mine foreman shall withdraw the men from the mine or from the portion of the mine which is dangerous, until such props, timbers and cap-pieces are provided and delivered in accordance with this section.

Section 109. The mine foreman or a competent person designated by him shall, each day the mine is in operation, examine the shafts, slopes, main roads, traveling-ways, timbering, signal apparatus and all machinery connected therewith, to see that they are in safe and efficient working condition. The person making such examination shall each day make a report of the same in writing, with ink, in a book kept for that purpose in the office of the mine foreman, signing his name and giving the date of the examination.

Section 110. The mine foreman of a mine liberating explosive gas shall at or near the bottom of each shaft or slope, or on the surface provide a permanent station where a proper danger signal designated by letters and colors shall be placed, and no person shall pass said station as long as the danger signal is posted thereon.

Section 111. When the workings of a mine are a mile or more from the bottom of a shaft or slope, the mine foreman, with the consent of the inspector in writing, may provide a permanent station for the use of the fire bosses with danger signal posted as provided in section one hundred and ten, and no person shall pass said station as long as the danger signal is posted thereon. In said station a fire proof vault of ample dimensions shall be erected of brick, stone or concrete, in which the record books of the fire bosses shall be kept.

Section 112. When a permanent station of the fire bosses is located a mile or more from the bottom of a shaft or slope all abandoned, finished or unfinished workings in the intervening distance shall be completely shut off from the traveling-way (which shall be in the intake), by stoppings of stone or brick laid in cement or lime mortar, or of concrete of sufficient thickness, or of other suitable material approved in writing by the inspector, so as to prevent noxious or explosive gases from coming in contact with the employes.

Section 113. The mine foreman shall see that all working places and roadways and all other places are kept free from standing gas. Any accumulation of explosive or noxious gases in the worked-out or abandoned portion of a mine shall be removed, if practicable, as soon as possible after its discovery. No person except those employed in the removal of the gases shall be allowed in that portion of the mine until the gases are removed or rendered harmless.

Section 114. The mine foreman shall see that all dangerous places in the mine are properly fenced off across the openings so that no person can enter and that danger signals are posted on the fence. He shall notify the superintendent in writing whenever in his opinion the mine is becoming dangerous through the lack of ample ventilation, squeeze or from any other cause beyond his control.

Section 115. The mine foreman shall see that in any working place that is being driven within supposedly dangerous proximity to an abandoned mine or a portion of a mine suspected of containing explosive or noxious gases or an accumulation of water, at least one bore hole shall be maintained not less than twenty feet in advance of the face, and on each side of such working place bore holes of the same depth shall be drilled at right angles not more than ten feet apart, and the opening shall not be more than ten feet wide.

Section 116. The mine foreman shall see that no dangerous accumulation of water or gas shall be tapped from any mine or from any abandoned portion of a mine until all the employes are out of the

mine except those engaged at the work of tapping, and such work shall be done with approved locked safety lamps under the immediate supervision of the mine foreman.

Section 117. The mine foreman, in case of accident to a ventilator or its machinery whereby the ventilation is seriously interrupted, shall order the employes to withdraw immediately from the mine or the portion thereof affected, and they shall not be allowed to return to their work until the ventilation has been restored and the mine examined and reported safe.

Section 118. The mine foreman may, if he deems it necessary for the protection of life and property, make a personal examination of any employe about to enter a gaseous mine or a portion thereof where approved locked safety lamps are used, and he shall not allow any such employe to go to his work until it shall be satisfactorily shown that no prohibited articles are concealed about the employe's body.

Section 119. The mine foreman shall see that the diameter of the bits of all drills used in drilling holes for explosives is at least one-quarter of an inch larger than the diameter of the cartridge in use, so as to prevent the forcing of a cartridge into any hole.

Section 120. The mine foreman shall at or near the foot of every shaft or slope where persons are hoisted or lowered, provide a comfortable waiting room for shelter and protection, of ample dimensions to seat from ten to twenty persons.

Section 121. The mine foreman shall see that the height of gangways or traveling-ways wherein employes have to travel into and out of the mine is not less than five feet six inches. Where such height is impracticable the employes at their request shall be hauled into and out of the mine at the beginning and end of each shift.

Section 122. The mine foreman shall see that in all gangways or haulage-roads driven prior to the passage of this act, where coal is hauled and where employes travel, there is sufficient width to permit persons to pass moving cars with safety. If in the judgment of the inspector sufficient width cannot be provided then safety holes shall be made on one side of the passageway not less than two feet deep by four feet wide and level with the road. The holes shall not be more than one hundred and fifty feet apart on the gangways or haulage-roads where coal is hauled by animal power, and not more than seventy-five feet apart where coal is hauled by motive power. They shall be whitewashed, well drained and kept free from obstruction.

Section 123. The mine foreman shall see that all gangways and haulage-roads driven after the passage of this act, where employes travel and coal is hauled thereon, have a clear space of two and one-half feet from the side of the car to the rib or timber, which shall be made and continued throughout on the one side of said passageway, and such space shall be well drained and kept free from obstruction: Provided, however, That if found impracticable by the inspector to provide such clearance, then safety holes shall be made as required in section one hundred and twenty-two of this article.

The roof and sides of all passageways and safety holes shall be made and kept secure.

Section 124. The mine foreman shall see that approved locked safety lamps are used where in his judgment the use of open lights

is a menace to life and property, and that only permissible explosives are used for blasting purposes in such places. He shall see that in every mine or portion of a mine where approved locked safety lamps are used exclusively all blasts are fired by an electric battery and that only permissible explosives are used.

Section 125. The mine foreman shall provide suitable lighted signals, which shall be placed on the rear end of each trip operated in the mine by motor. He shall also provide an efficient alarm, which shall be attached to the end of such trip in the direction in which it is moving.

Section 126. The mine foreman shall direct and see that efficient safety blocks or devices are placed for the purpose of preventing cars from running into shafts, slopes or planes, where employes are hoisted or travel, and shall see that such safety blocks or devices are maintained in good working condition.

Section 127. The mine foreman shall call the attention of every miner and every other employe when first employed to the special and general rules posted at the mine. He shall not employ in any mine liberating explosive gas any person who is not competent to understand the rules and regulations, but this provision shall not apply to a particular section of such mine that does not liberate explosive gas.

Section 128. The transportation of explosives and tools into and out of the mine shall be under the direct charge of the mine foreman.

Section 129. The mine foreman shall see that the fans or keeps are kept locked at each landing when not in use, and he shall designate a person or persons to have charge of the keys.

Section 130. In a mine wherein explosive gas has been liberated within one year before the passage of this act, or in which it shall be liberated after the passage of this act in sufficient quantities to be detected by an approved safety lamp, the mine foreman shall employ a sufficient number of fire bosses to examine the mine in accordance with the provisions of article seven of this act, and he shall see that the fire bosses have left their mark in places reported as examined. He shall each day read carefully and countersign with ink all daily reports entered in the record book of the fire boss.

Section 131. Whenever the mine foreman cannot personally comply with all the provisions of this article he shall employ, as provided in section twenty-four of this act, a sufficient number of assistant mine foremen to make examinations as required by section one hundred and one and to perform such other duties of the mine foreman as may be necessary.

Section 132. In the absence of the mine foreman through sickness or otherwise, the superintendent shall designate an assistant mine foreman to perform the duties of the mine foreman, who shall be liable to the same penalties as the mine foreman for any violation of this act.

Section 133. Each assistant mine foreman shall make a daily report, with ink, in a book provided for that purpose, stating the general condition of the working places visited in the part of the mine allotted to him by the mine foreman, and he shall make a note of any danger observed, and sign his name to the report. The mine

foreman shall read carefully the daily report of each assistant mine foreman and shall countersign the reports with ink not later than the following day.

Section 134. If at any time the mine foreman, assistant mine foreman or fire boss shall find that the mine or any portion thereof, for any cause whatever, has become dangerous, he shall take every precaution to insure the safety of the employes, and every employe except such as may be required to remove the danger shall be withdrawn from such mine or portion thereof until it is examined by the mine foreman, assistant mine foreman or fire boss, and reported safe.

Section 135. Nothing in this act shall prevent a mine foreman from acting as an assistant mine foreman or as a fire boss in any mine. Nothing in this act shall prevent an assistant mine foreman from acting as a fire boss.

Section 136. The mine foreman shall designate a footman at every shaft or slope where persons are lowered into and hoisted from the mine.

Section 137. Any mine foreman or assistant mine foreman or fire boss who fails or neglects to carry out any of the provisions of this article that relate to his duties shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than fifty dollars or more than two hundred and fifty dollars, at the discretion of the court.

ARTICLE VII

Duties of Fire Boss

Section 150. The fire boss shall every morning carefully examine, before the men enter the mine, every working place and every place adjacent to live workings and every roadway and every unfenced road to abandoned workings and falls. Before entering the mine he shall satisfy himself that the ventilating apparatus is running at the speed designated by the mine foreman. Before proceeding with the examination he shall see that the air current is traveling in its proper course. In making the examination for gas he shall use no light other than an approved safety lamp, but for making other examinations he may use an approved electric lamp. The examination shall begin within two hours prior to the appointed time for men to enter the mine. The fire boss shall examine for all dangers in all portions of the mine under his charge, and after the examination he shall leave at or near the face of every working place the date as evidence that he performed his duty. He shall also examine the entrance or entrances to all worked-out and abandoned portions adjacent to the roadways and working places under his charge for evidence of explosive gas. He shall place a danger signal across the entrance to every working place and every other place where explosive gas is discovered or where immediate danger from any other cause is found to exist, and the signal so placed shall be sufficient warning for persons not to enter. He shall immediately report, by telephone or otherwise, to the mine foreman or an assistant mine foreman the location and nature of any danger that may have been discovered.

Section 151. The fire boss shall, when men are at work, make a second examination between the hours of eight ante meridian and one post meridian, of every working place previously examined. He shall give special attention to the condition of the roof and sides of working places and the general condition thereof as to safety. If he discovers any working place in a dangerous condition he shall direct the miner to secure the place at once. If it cannot be made safe he shall withdraw the men immediately and report the matter to the mine foreman or an assistant mine foreman.

Section 152. A suitable record book shall be kept in the mine foreman's office on the surface, or at a station located near the bottom of a shaft or slope, or at a station a mile or more from a shaft or slope, and on the return of the fire boss to said station, after the first examination, he shall enter with ink in said book the condition of the portion of the mine examined, and shall sign his name to the report. Such record shall show the date of the examination, the time taken in making it, and shall clearly state the location and nature of any danger that may have been discovered. A similar record shall be made of the second examination.

Section 153. No person shall enter the mine or any portion thereof until the fire boss returns to the station on the surface, or to the station near the bottom of a shaft or slope, or to the station located a mile or more from the shaft or slope, as the case may be, and reports that the mine or the portion thereof is safe to enter. When the station is located a mile or more from the foot of the shaft or slope, he shall report to the mine foreman by telephone or otherwise. When stations are located inside the mine the fire boss shall, whenever he is absent from the station, keep his record book locked in a vault provided for that purpose.

Section 154. No person (except the mine foreman and in case of necessity such other persons as may be designated by him) shall pass beyond a danger signal until the mine or the portion thereof has been examined and is reported safe.

Section 155. The fire boss shall not allow any person to remain in any portion of the mine under his charge through which a dangerous accumulation of explosive gas is being passed in the ventilating current.

Section 156. Any fire boss who neglects to comply with the provisions of this article relating to his duties, or who shall knowingly or wilfully make a false report of the condition of any place in the portion of the mine allotted to him for examination, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than twenty-five dollars or more than one hundred dollars, at the discretion of the court, and his certificate shall be revoked by the Chief of the Department of Mines. Any such fire boss may again be an applicant for a certificate at any regular examination after the expiration of six months, but if found guilty of a second offense his certificate shall be revoked and he may not again be an applicant for re-examination.

ARTICLE VIII

Duties of Outside Foreman

Section 170. The breaker and outside operationsof every colliery shall be under the charge and direction of the outside foreman, who shall see that the provisions of this article are complied with.

Section 171. The outside foreman shall see that all dangerous machinery, such as engines, rolls, wheels, screens, shafting, belting and conveyor lines, is properly protected, and that the sides of stairs, trestles and plank walks are provided with guard rails. He may permit the temporary removal of a fence, guard rail, protection or covering, for the purpose of repairs, if proper precaution is taken, but such fence, guard rail, protection or covering shall be replaced immediately thereafter.

Section 172. The outside foreman shall employ a sober and competent person, not under twenty-one years of age, as a breaker engineer, who shall have charge of the breaker engine at all times while it is in motion.

Section 173. A signal apparatus shall be placed at important points in every breaker so that in case of accident the engineer can be promptly notified to stop the machinery.

Section 174. No oiler under sixteen years of age shall be employed by the outside foreman for oiling breaker machinery. No oiler or other employe shall oil dangerous parts of such machinery while the machinery is in motion.

Section 175. For the preservation of the health of the employes in the breaker the outside foreman shall see that the coal dust that accumulates therein is removed as far as practicable and that the breaker is heated by steam or hot water and kept at a comfortable temperature.

Section 176. The outside foreman shall designate a topman at every shaft or slope where persons are lowered into and hoisted from the mine.

Section 177. In shafts or slopes where men are lowered or hoisted to the surface the outside foreman shall as often as necessary see that so much of the part of the rope inserted in the cone as may be found defective, is cut off, and the cone readjusted, and that no ropes of doubtful security are used in the lowering or hoisting of employes.

Section 178. Any outside foreman who neglects or fails to comply with any of the provisions of this article shall be guilty of a misdemeanor and upon conviction thereof shall be sentenced to pay a fine of not less than fifty dollars or more than two hundred dollars, at the discretion of the court.

ARTICLE IX

Mine Inspectors' Examining Board. Appointment of Inspectors, Their Qualifications and Salary

Section 190. The Governor shall during the month of August one thousand nine hundred and seventeen and every four years thereafter appoint five citizens of this Commonwealth of good repute to compose the Anthracite Mine Inspectors' Examining Board who shall examine applicants for the office of inspector in the anthracite coal region of this Commonwealth. Two of the members of the board shall be mining engineers of not less than five years' practical experience in anthracite mines and three of the members shall be coal miners in actual practice in anthracite mines liberating explosive

gas who have had at least five years' practical experience as miners in the anthracite mines of Pennsylvania. Appointees to the examining board shall be at least thirty-five years of age.

Any vacancy that may occur in the membership of the board shall be filled by the Governor for the unexpired term.

Section 191. Each member of the board shall receive the sum of ten dollars a day for each day actually employed and all necessary expenses incurred in carrying out the provisions of this article which shall be paid out of the State Treasury on warrant of the Auditor General issued upon presentation of vouchers properly made out and sworn to by each member of the board and approved by the Chief of the Department of Mines. The board may engage the services of a clerk who shall be a stenographer and whose compensation shall be the same as that of the members of the board and payable in the same manner.

Section 192. The board shall meet on the second Tuesday in September one thousand nine hundred and seventeen and every four years thereafter in the City of Wilkes-Barre to examine applicants for the office of inspector. Two weeks previous to each examination the board shall meet to prepare questions and formulate rules for conducting the examination. The board may also be convened by the Governor at any time for the purpose of examining applicants to fill vacancies in the office of inspector or to perform any other necessary work. Public notices of all examinations shall be given for two weeks prior thereto in at least three daily newspapers in each county in which the vacancy exists. The cost of such notices shall be paid by the State Treasury in like manner as the compensation of the Examining Board.

Section 193. The board after being duly organized shall take and subscribe to the following oath or affirmation, before any officer authorized to administer oaths and affirmations, namely:

"I do solemnly swear (or affirm) that I will discharge the duties of my office with fidelity, that I have not paid or contributed or promised to pay or contribute either directly or indirectly any money or other valuable thing to procure my appointment, that I will not knowingly receive directly or indirectly any money or other valuable thing for the performance or non-performance of any act or duty pertaining to my office other than the compensation allowed by law."

The oaths and affirmations of the members of the board shall be filed in the Department of Mines.

Section 194. The qualifications of an applicant for the office of inspector shall be certified to the board and shall be as follows:

The applicant shall be a citizen of Pennsylvania, of temperate habits, of good repute and integrity, in good physical condition and shall be between thirty and fifty years of age. Any inspector elected under the provisions of the act of June eight, one thousand nine hundred and one (Pamphlet Laws five hundred and thirty-five) entitled "An act amending article two of an act entitled 'An act to provide for the health and safety of persons employed in and about the anthracite coal mines of Pennsylvania and for the protection and preservation of property connected therewith' approved the second day of June, Anno Domini one thousand eight hundred and ninety-one," or

its amendments or appointed under the provisions of this act shall if in good physical condition be eligible for reappointment even if beyond fifty years of age.

The applicant must have a comprehensive knowledge of the different systems of working and ventilating anthracite coal mines and must have had at least ten years' practical experience in coal mines as a miner, fire boss, mine foreman or inside superintendent, five years of which immediately preceding his examination must have been in the anthracite mines of this Commonwealth. He must have had practical experience with explosive and noxious gases generally found in coal mines and must have a general knowledge of mines, mining and machinery and of the chemistry of the gases generally found in coal mines. He must be conversant with the work of first aid corps and with the work and requirements of the rescue corps. He must be conversant with the science and use of electricity as applied to coal mines and must have sufficient knowledge of the science of mining engineering to enable him to understand and read the mine workings of any mine as shown on maps presented at the examination and must be able to make a cross section of any mine from said maps when so required by the examining board. He shall give evidence of such theoretical as well as practical knowledge and general intelligence respecting mines and mining and the working and ventilation of mines as will satisfy the board of his capability and fitness for the duties imposed upon the inspector by the provisions of this act.

Section 195. The principal part of the examination shall be in writing but each applicant shall also undergo an oral examination pertaining to explosive and noxious gases, safety lamps, methods of ventilation and mine management. To assist the board in the work of rating the qualifications of the applicant the questions and answers in the oral examination shall be reported verbatim by an expert stenographer and fully typewritten.

Section 196. Any person who has passed two consecutive examinations for the office of inspector and has served as an inspector continuously for eight years shall be exempt from taking any further examination and shall continue in said office without any further examination unless removed or suspended.

Section 197. A general average of at least ninety per centum shall be required to pass the examination successfully.

Section 198. The board or at least four members thereof shall certify to the Governor and also to the Chief of the Department of Mines the names and percentages of all successful applicants who are properly qualified under the provisions of this act to fill the office of inspector. A certificate of qualification prepared by the Chief of the Department of Mines shall be issued to each successful applicant.

Section 199. The manuscripts and other papers of all applicants in the written examination together with the tally sheets and the correct solution of each question as prepared by the board and also the stenographer's report of the oral examination shall be filed in the Department of Mines.

Section 200. The term of office of the inspectors under this act shall be four years or until their successors are duly appointed and qualified.

Section 201. The Governor shall from the names certified to him by the board appoint and commission one person for each district to

be inspector thereof whose commission shall be for a full term of four years from January first, one thousand nine hundred and twenty-one. All inspectors in office when this act takes effect shall continue in office until the first day of January, one thousand nine hundred and twenty-one.

Section 202. When a vacancy occurs in the office of inspector by death or otherwise the Governor shall appoint and commission a person whose name appears on the list of successful applicants on file in the Department of Mines for the unexpired term. When the list of qualified applicants is exhausted the Governor shall cause the examining board to meet for a special examination of the persons who may present themselves and the board shall certify to the Governor and also to the Chief of the Department of Mines the names and percentages of all successful applicants who have made a general average of at least ninety per centum in the examination and are properly qualified to fill the office of inspector. Such special examination shall be conducted in the same manner as the regular examination.

Section 203. The salary of the inspectors shall be three thousand five hundred dollars ($3,500.00) a year, to be paid quarterly by the State Treasurer on warrant of the Auditor General issued upon the presentation of voucher approved by the Chief of the Department of Mines. Each inspector may also incur traveling and such other expenses as may be necessary for the proper discharge of his duties under the provisions of this act which shall be paid quarterly by the State Treasurer on warrant of the Auditor General issued upon presentation of vouchers properly made out and sworn to by the inspector and approved by the Chief of the Department of Mines.

Each inspector shall have an office in his district. The Chief of the Department of Mines may procure for the inspectors on their request furniture, instruments, chemicals, typewriters, stationery and all other necessary supplies, which shall be paid for by the State Treasurer on warrant of the Auditor General issued upon the presentation of vouchers approved by the Chief.

All furniture, instruments, plans, books, memoranda, notes and other materials pertaining to the office of inspector shall be the property of the State and shall be delivered by the inspector to his successor in office.

Section 204. The inspectors shall be allowed all necessary expenses incurred by them in enforcing the several provisions of this act in the respective courts of this Commonwealth provided they have the consent of the Chief of the Department of Mines before such expenses are incurred. Such expenses shall be paid by the State Treasurer on warrant of the Auditor General issued upon presentation of an itemized voucher approved by the Court before which the proceedings were instituted and also by the Chief of the Department of Mines.

Section 205. Each inspector shall before entering upon the discharge of his duties give a bond to the Commonwealth in the sum of five thousand dollars with sureties to be approved by a judge of the court of common pleas of the county in which the district is located conditioned for the faithful discharge of his duties and shall take the oath required by the Constitution.

Section 206. In case any inspector becomes incapacitated to perform the duties of his office or is granted leave of absence by the Chief of the Department of Mines, the Governor, at the request of said Chief, shall appoint temporarily to the office a person on the eligible list of applicants. The temporary inspector shall act until the regular inspector is able to resume the duties of his office and shall be paid in the same manner as the regular inspector.

Section 207. No inspector shall act as a manager of any coal mine or as an agent or a mining engineer for any company, nor shall he be interested in the operation of any anthracite coal mine of this Commonwealth.

Section 208. Any member of the examining board or clerk or stenographer employed by the board who neglects or fails to comply with the provisions of this article shall be guilty of a misdemeanor and upon conviction shall be sentenced to pay a fine not exceeding two hundred and fifty dollars or to undergo an imprisonment not exceeding thirty days, or both, at the discretion of the court.

ARTICLE X

Duties and Powers of Inspector

Section 220. The inspector shall examine all the collieries in his district at least once every three months, as often in addition thereto as the necessities of the case or the condition of the mines require. He shall see that every necessary precaution is taken to secure the safety of the workmen and that the provisions of this act are observed and obeyed and he shall personally visit each working-face and see that the air current is carried to the working-faces and is of sufficient quantity or volume to thoroughly ventilate the places.

The inspector shall keep in his office a record of all such examinations and inspections showing—

(a) The general condition in which he finds each mine, especially with reference to safety and ventilation and also to drainage in parts where employes travel.

(b) The number of persons employed inside.

(c) The number of fatal and serious accidents, showing the nature and causes thereof and the number of deaths resulting therefrom.

(d) Such other information as he may deem necessary or as may be required by the Chief of the Department of Mines.

Section 221. The inspector when making his regular examinations and inspections shall read and carefully examine the record books of the mine foreman, assistant mine foreman and fire boss. If he finds that the provisions of the law are not being complied with he shall notify the mine foreman to that effect in writing and if he finds the same condition a second time he shall forthwith prosecute the guilty person or persons.

Section 222. Whenever the inspector is in doubt regarding the enforcement of certain provisions of this act he shall refer the matter to the Chief of the Department of Mines, who shall render a decision thereon promptly and his decision shall be final, unless the operator or superintendent shall within seven days of the receipt thereof appeal therefrom to the court of common pleas of the proper county. The procedure in such appeal shall be by petition, rule and answer,

and service of any rule granted shall be made in the manner directed by the court. The petition in such appeal shall set forth a complete statement of the facts together with a correct copy of the decision of the Chief of the Department of Mines. After hearing the court shall make such order in the premises as may seem just and reasonable, which order shall be final.

Section 223. To enable the inspector to perform the duties imposed upon him by this act he shall have the right at all times to enter any mine in his district or to enter any mine in any other district when directed to do so by the Chief of the Department of Mines to make examination and inspection or to obtain information. If he discovers or is informed of any violation of this act which may endanger life or health or if he finds any other condition or practice not covered by the provisions of this act which may endanger the life or health of the employes he shall at once notify the mine foreman in writing to remove forthwith said dangerous conditions. If the mine foreman fails to comply with such notice forthwith the inspector shall immediately apply in the name of the Commonwealth to the court of common pleas of the county in which said mine is located or to a judge thereof in chambers for a writ of injunction to enjoin the operation of all work in said mine or any portion thereof as the case may require. The court or a judge thereof shall at once proceed to hear and determine the case and if the cause appears to be sufficient after hearing the parties and their evidence as in like cases shall issue its writ to restrain the working of said mine or portion thereof until all cause of danger is removed.

The cost of said proceedings shall be borne by the operator unless the court or a judge thereof finds said allegations not sufficient, in which event the case shall be dismissed and the costs shall be paid by the county. Such payments shall be made by the State Treasurer upon warrant of the Auditor General upon the filing of a proper voucher by the Chief of the Department of Mines.

Should any inspector during an inspection of a mine or a portion thereof find such dangerous conditions existing therein that in his opinion any delay in removing the workmen from such dangerous places might cause loss of life or serious personal injury he shall have the right to temporarily order the withdrawal of all persons from the mine or from such dangerous places until the foregoing provisions of this section can be carried into effect.

Section 224. The inspector shall after the final examination and inspection of a mine make out a written report on forms furnished by the Department of Mines which shall show

(a) The general condition thereof.

(b) The dates of the examinations and inspections.

(c) The number of cubic feet of air entering the mine.

(d) The number of cubic feet of air found in the return airway outside the last cross-heading in each split.

(e) The number of persons employed in each split.

(f) And he shall also certify that the employes are hoisted to the surface or given access thereto according to law.

The report shall contain such other information as the inspector may deem necessary or as may be required by the Chief of the Department of Mines. A copy of said report shall be conspicuously posted at the mine and protected, where it shall remain until the

next final inspection is made and a copy shall be sent forthwith to the Chief of the Department of Mines. The original report shall be preserved in the office of the inspector for one year.

Section 225. The inspector shall visit each emergency hospital in the mines once in every three months. He shall examine the records relating to such hospitals and notify the superintendent in writing of any neglect or non-compliance with the provisions of article twenty-five of this act. Such notices shall be regarded as prima facie evidence in any inquest that may be held on any employe dying from injuries received in a mine.

Section 226. Whenever an inspector has reason to believe that an explosive or illuminant is being used in violation of the provisions of articles twenty-eight and thirty of this act he shall take samples of the same and have them tested. If after any such test the inspector finds that any explosive or illuminant used violates any of the provisions of this act he shall notify the proper official to discontinue the use of such explosive or illuminant and upon failure to obey such notice the inspector shall take such appropriate steps by injunction as hereinbefore provided or otherwise to secure obedience to such notice.

Section 227. Whenever the inspector is of the opinion that the return air in any section of a mine contains a dangerous quantity of methane he shall take samples of the air and analyze them. If he finds that the air contains more than one per cent. of methane he shall at once order that approved locked safety lamps be used exclusively in the working of such section.

Section 228. The inspector shall make the following reports to the Chief of the Department of Mines on blank forms provided for that purpose.

(a) He shall report promptly each fatal accident. He shall also not later than the sixteenth of each month make a report including all fatal accidents already reported for the preceding month and all serious non-fatal accidents that occurred during the preceding month stating

(1) The date, nature and cause of each accident; (2) the responsibility therefor; (3) the name, age, occupation and nationality of each person killed or seriously injured; (4) whether married or single and the number of widows and orphans left. Such report shall be recorded and filed in the Department of Mines and shall be included (or a synopsis of the same) in the annual report of said Department.

(b) Not later than the sixth day of each month he shall make a report giving

(1) The name of the operator and the name and location of each mine inspected during the preceding month; (2) the dates of inspection; (3) the condition of mine; (4) the quantity of air in circulation at all points required by this act or as required by the Chief of the Department of Mines; (5) the number of persons employed in each split of air.

(c) Not later than the last day of February of each year he shall make an annual report to the Chief of the Department of Mines which shall recapitulate the duties performed by him during the preceding year and briefly describe

(1) The condition of the mines relative to ventilation, drainage and general sanitary conditions as relating to the health, safety and

welfare of the employes; (2) such suggestions or information of importance as he may deem necessary or as may be required by the Chief of the Department of Mines.

ARTICLE XI

Discretionary Powers of Inspector. Arbitration

Section 240. The inspector shall exercise discretion in the performance of his duties under the provisions of this act and in rendering his decisions and serving his orders and notices. All decisions of the inspector shall be in writing. If the operator, superintendent or mine foreman of any mine is dissatisfied with any decision of the inspector such dissatisfied person may appeal from said decision to the Chief of the Department of Mines who shall at once direct two or more of the other inspectors to promptly accompany the inspector of the district to make further examination into the matter in dispute. If the said inspectors shall agree with the decision of the inspector of the district their decision shall be final, unless the dissatisfied person shall within seven days of the receipt of the decision of the committee of inspectors appeal therefrom by petition to the court of common pleas of the county in which the mine is situated.

Section 241. Upon presentation of such petition the court or a judge thereof in chambers shall forthwith appoint a commission of four practical, reputable and competent persons, two of whom shall be recommended by the operator or superintendent and two by the Chief of the Department of Mines. The four persons thus recommended shall name a fifth person who shall also be practical, reputable and equally competent. None of the persons so named shall be in the employ of the operator, operating company or any of its officers or of the Department of Mines. The persons named shall constitute a commission to investigate and report on the matter in dispute. In case said four persons or any of them are not recommended by a writing filed in the court within seven days after the appeal is filed, the court, or the judge thereof in chambers, shall forthwith appoint the necessary number of practical, reputable and competent persons. Should the four persons chosen at any time not agree in writing upon the fifth person within five days after they have received notice of their appointment the court shall appoint the said fifth person of the commission.

Section 242. The commission of five persons shall under the instructions of the court forthwith examine said mine or portion thereof and report under oath within ten days after their appointment the facts as they exist and the conditions pertaining thereto, and based upon such conditions and facts the decision of a majority on the matter in dispute shall be final and conclusive, unless exceptions thereto shall be filed by the operator, superintendent or mine foreman or by the Chief of the Department of Mines within seven days of the filing of said report. If exceptions are filed the court shall at once hear the same and upon testimony taken thereon enter a decree in accordance with right and justice. From any final decree of the court the operator, superintendent or mine foreman or the Chief of the Department of Mines may appeal to the Supreme or Superior Court for review as in other cases.

Section 243. If the court of common pleas sustains the decision of the committee of inspectors and no appeal is taken, or if on appeal the Supreme or Superior Court finally sustains the decision of the inspectors, the appellant from said decision of the committee of inspectors shall pay all costs of such proceedings; but if said court of common pleas or the Supreme or Superior Court shall not sustain the decision of the committee of inspectors, then all costs shall be paid by the Commonwealth. In the latter case the same shall be paid by the State Treasurer on warrant of the Auditor General upon the presentation of a voucher properly signed by the Chief of the Department of Mines.

Section 244. No appeal from any decision of the committee of inspectors or of the commission appointed by the court of common pleas shall operate as a supersedeas to such decision during the pendency of such appeal either to the court of common pleas or to the Supreme or Superior Court, unless so ordered by the court of common pleas or the appellate court or any judge thereof either by general rule or special order upon such terms as may be required by the court or judge granting the supersedeas.

ARTICLE XII

Removal of Inspector for Neglect or Malfeasance

Section 260. The court of common pleas in any county upon the presentation of a petition signed by not less than fifteen reputable citizens, who shall be miners or operators of mines, supported by the affidavits of five or more of said petitioners, setting forth that any inspector is neglectful of or is incompetent to perform the duties of his office or that he is guilty of malfeasance in office, shall issue a citation in the name of the Commonwealth to the said inspector to appear before the court. At least fifteen days' service of such citation shall be given to the inspector in the manner provided by court. At the time fixed the court shall inquire into the allegations of the petitioners. No citation shall issue until the petitioners shall file a bond in court in the name of the Commonwealth in such sum as the court may direct, and with sufficient sureties approved by the court, conditioned that the petitioners shall pay all costs of the proceedings in case the charges alleged in said petition are not sustained.

Section 261. If the court finds that the said inspector is neglectful of or is incompetent to perform the duties of his office or that he is guilty of malfeasance in office, the court shall certify the same to the Governor who shall declare the office of said inspector vacant and proceed to fill the vacancy thereby created in the manner provided by this act.

The costs of said investigation shall if the charges are sustained be imposed upon the inspector, but if the charges are not sustained the costs shall be imposed upon the petitioners.

ARTICLE XIII

Inspection Districts

Section 270. The Chief of the Department of Mines shall divide the anthracite coal region of the Commonwealth into twenty-five in-

spection districts and he shall assign the inspectors to their respective districts. He shall also designate their places of abode at points convenient to the mines under their charge.

Section 271. With the consent of the Governor the Chief of the Department of Mines may at any time rearrange the districts and add to the number of inspectors if in his judgment the number should be increased.

ARTICLE XIV

Ventilation

Section 280. The minimum quantity of air provided in any mine shall be not less than two hundred cubic feet per minute for each person employed in the mine and shall be as much more as may be required by the inspector.

Section 281. The ventilation shall be conducted to and along the face of every working place in the mine in quantities sufficient to dilute, render harmless and carry away smoke and noxious and dangerous gases to such an extent that all the working places and roadways shall be kept continually in a healthful and safe condition for the employes.

Section 282. Every mine where more than fifty persons (miners and miners' laborers) are employed shall be divided into districts. Each district shall be provided with a separate split of pure air and the ventilation shall be so arranged that not more than fifty miners and miners' laborers are employed at the same time in any one split. The return air from each split shall be conducted through an overcast or an undercast which shall lead into a return airway. The inlet and return airways of every district shall be separated by a pillar of coal or rock where practicable, otherwise by a wall of concrete or stone or brick laid in cement or lime mortar not less than sixteen inches in thickness.

Section 283. All cross-headings connecting the inlet and outlet airways of every district when closed permanently shall be substantially closed with walls of concrete or of stone or brick laid in cement or lime mortar or with other suitable material approved in writing by the inspector. Cross-headings between rooms, except those nearest the face, shall be closed and a brattice shall be erected from the last cross-heading through which the air enters so as to conduct the air to the face. The closing of such headings and the erection of a brattice may be omitted on the written consent of the inspector.

Section 284. All doors used for guiding and directing the ventilating current shall be so hung and adjusted as to close automatically. Every main door (that is the door that controls the air currents in each split) and the door the opening of which would short circuit the air of any split shall have an attendant whose constant duty shall be to open and close the door and to prevent it from standing open any longer than is necessary for persons, animals or cars to pass through. A hole for shelter shall be made at each door where an attendant is employed, if the space is less than four feet from the body of the car to the rib.

Section 285. For the purpose of preventing any temporary stoppage of the ventilation all main doors shall be so placed that when one door is open another which has the same effect upon the air

current shall remain closed. If the inspector is of the opinion that an extra main door is necessary he shall notify the mine foreman in writing to that effect and such door shall be erected forthwith and left standing open and out of reach of accidents and shall be so fixed that it can at once be closed in the event of accident to the main door in use. The frame work of all main doors shall be substantially secured with concrete or with stone or brick laid in cement or lime mortar.

Section 286. Every permanent overcast or undercast shall be substantially built of incombustible material and of such strength as the circumstances may require. This section shall not apply to overcasts or undercasts in use prior to the passage of this act, unless in the opinion of the inspector the same are a menace to the lives of the employes.

Section 287. All air passages shall be of sufficient area to allow for the circulation of not less than two hundred cubic feet of air per minute for every person working in a mine or in any section thereof. In no case, except in the main inlet or outlet airways in mines liberating explosive gas which can be detected by an approved safety lamp, shall the velocity of the air exceed four hundred and fifty lineal feet per minute in any opening through which the air current passes.

Section 288. All permanent ventilators shall be erected on the surface and shall be kept continually in operation at the speed established by the mine foreman and shall not be stopped except upon his written consent. Whenever deemed necessary by the mine foreman a temporary ventilator may be erected inside the mine.

Section 289. Every ventilator in operation at a mine shall be provided with a recording instrument by which the speed of the ventilator or the ventilating pressure for each hour of every day is indicated with the date thereof and such record shall be preserved in the mine foreman's office for a period of one year.

Section 290. No furnace shall be used for the purpose of ventilating any mine, except upon the written permission of the inspector.

Section 291. All worked-out and abandoned portions of a mine in operation shall be kept free of dangerous bodies of gas or water; but if this be found impracticable, the inspector must be immediately notified.

Section 292. Any person who shall refuse or neglect or fail to comply with any of the provisions of this article shall be guilty of a misdemeanor and upon conviction thereof shall be sentenced to pay a fine of not less than fifty dollars or more than two hundred and fifty dollars or to undergo imprisonment not exceeding thirty days or both at the discretion of the court.

ARTICLE XV

Signaling Apparatus, Hoisting Machinery, Safety Catches, Ropes and Chains

Section 300. In every shaft or slope wherein men are lowered or hoisted the owner, operator or superintendent shall install and maintain in good condition, a signal apparatus so that conversation may be held and understood between the employes at the top and at the bottom of such shaft or slope, and also an efficient means of signaling

from the bottom of such shaft or slope to the engineer in charge of the hoisting engine. The same provision shall apply to inside planes where coal is lowered and employes have to travel thereon.

Section 301. In all gaseous mines telephone connections shall be made from the surface to each lift and main centers of the mine. Telephone connections shall also be made in any other mine or portion of a mine when ordered in writing by the inspector.

Section 302. Every carriage or cage used for lowering or hoisting employes in shafts shall be provided with guard rails at the sides and with chains or bars or gates at the ends and with suitable overhead holds and with sufficient covering overhead to protect the employes thereon. Each carriage or cage shall also be provided with efficient safety catches which shall be tested once every two months and a record of each test shall be sent to the superintendent and also recorded with ink in a book kept for that purpose in the superintendent's office.

Section 303. All shafts shall be provided with safety gates at the top and intermediate landings and such gates shall be controlled by the carriage or cage or engine.

Section 304. All ropes shall be securely attached to the shaft of the drum of every engine that is used for lowering or hoisting employes into and out of the mine. The flanges of such drum shall have a clearance of not less than two inches when the whole of the rope is wound thereon and not less than two full turns of the rope shall always remain on the drum. An adequate brake shall be attached to the drum where men or material are lowered or hoisted and an indicator shall be attached to the hoisting apparatus to show the position of the carriages, cages or cars in the shaft or slope. An efficient safety device to prevent overwinding shall be attached to every engine used for lowering or hoisting employes. Every self-dumping cage shall be securely locked when persons are being lowered or hoisted thereon.

Section 305. The main coupling chain attached to the socket of the wire rope of every shaft or slope where employes are lowered or hoisted shall be made of the best quality of steel or iron, and bridle chains of the same material shall be fastened to the top crosspiece of the carriage or cage and attached to the rope not less than three feet above the socket.

Section 306. In shafts or slopes where coal is hoisted and employes are lowered or hoisted the ropes, links and chains shall be of ample strength with a factor of safety of not less than four to one of the maximum load. In shafts or slopes used exclusively for lowering or hoisting men and supplies the factor of safety shall not be less than eight to one of the maximum load. All such ropes, links, chains, safety catches, sockets and other hoisting apparatus shall be carefully examined at least once every day the mine is in operation by a competent person delegated for that purpose by the outside foreman. Any defect therein found by which life may be endangered shall be reported at once to the outside foreman who shall immediately proceed to remedy the defect. The person making said examination shall make a daily record of each inspection with ink in a book kept for that purpose in the office of the outside foreman.

Section 307. Every car, cage or gunboat used for lowering or hoist-

ing employes in slopes shall be provided with a proper guard so constructed that employes while riding thereon shall be protected from anything that may roll down the slope.

Section 308. Any person who fails or neglects to comply with any of the provisions of this article shall be guilty of a misdemeanor and upon conviction shall be sentenced to pay a fine of not less than fifty dollars or more than two hundred and fifty dollars or to undergo imprisonment not exceeding thirty days or both at the discretion of the court.

ARTICLE XVI

Approved Safety Lamps. Open Lights

Section 320. The use of open lights is prohibited in every working place, gangway, airway, traveling-way or in any other place where explosive gas is being liberated in such quantity as can be detected by an approved safety lamp. The use of open lights is also prohibited in pillar workings where a sudden inflow of explosive gas may be encountered. The use of open lights is also prohibited in all roadways or other portions of the mine through which explosive gas may be carried in the air current. All such places shall be worked exclusively with approved locked safety lamps.

Section 321. When one section of a mine is worked by the use of approved locked safety lamps, while another section is worked by the use of open lights, the return air from the gaseous section shall be conducted directly into a return airway leading to the outlet.

Section 322. When one section of a mine is worked by the use of approved locked safety lamps, while another section is worked by the use of open lights, the mine foreman shall provide a suitable danger station with danger signal posted thereon and no employes using open lights shall pass said danger signal or enter a section where approved locked safety lamps are in use.

Section 323. When approved locked safety lamps are used the position of the lamp station for lighting or relighting shall not be in the return air current.

Section 324. When approved locked safety lamps are used they shall be so constructed that they may be safely carried against the air current ordinarily prevailing in that portion of the mine in which such lamps are used.

Section 325. All approved safety lamps used for examining mines or for working therein shall be the property of the owner or operator and shall be in the care of a competent person or persons appointed for that purpose, who shall clean, fill, trim, examine, light and deliver them in a safe condition to the men when entering the mine and shall receive the lamps from the men when returning from the mine. Whenever approved locked safety lamps are required to be used they shall be delivered locked to the men, unless permission be first given by the mine foreman to have the lamps used unlocked.

Section 326. At any mine liberating explosive gas in such quantity as to be detected by an approved safety lamp a sufficient number of approved safety lamps, not less than one-fourth of the number of approved safety lamps in use, shall be provided by the owner, operator or superintendent as a surplus and shall be kept in a convenient place and in good condition for use in cases of emergency.

Section 327. Every person on receiving an approved safety lamp shall see that it is clean and safe for use. If at any time he finds that it has been injured or is defective he shall extinguish the light at once and return the lamp immediately to the person who has charge of such approved safety lamps.

Section 328. Any person who shall without authority alter an approved safety lamp or who shall intentionally damage such a lamp while in his possession, and any person who shall neglect or fail to comply with any of the provisions of this article shall be guilty of a misdemeanor and upon conviction shall be sentenced to pay a fine of not less than fifty dollars or more than two hundred and fifty dollars at the discretion of the court.

ARTICLE XVII

Shafts, Slopes, Openings, Outlets

Section 340. No person shall be employed to work in a mine unless the mine has at least two openings, that is, an inlet and outlet, from every seam of coal actually worked, and such openings shall be available from every lift thereof and shall have distinct means of ingress and egress available at all times for the use of the employes. The distance between shafts shall be at least two hundred and fifty feet. The distance between inlet and outlet of a slope shall be at least one hundred and fifty feet on the surface and the distance between said openings inside shall be at least sixty feet. Such distances between said openings shall apply only to mines opened after the passage of this act. The distances specified may be less, if the written consent of the inspector is obtained.

Section 341. The passageways between shafts or slopes shall at all times be maintained in safe condition and available for the employes to travel therein. The pillars between shafts or slopes shall not be removed without the consent of the inspector given in writing to the superintendent.

Section 342. The foregoing requirements shall not apply to the openings of a new mine or to the openings of a new lift of a mine that is being worked for the purpose of making connection between two outlets, but in any such case not more than twenty persons shall be employed at any one time in making such connection or driving the second opening. Nor shall the foregoing requirements apply to any mine in which the second opening has been rendered unavailable for use by reason of the final removal of pillars, but in any such case not more than twenty persons shall be employed therein at any one time. In any of the cases mentioned in this section the cage or carriage or other safe means of egress shall be available at all times for the persons employed in any mine that has no available second outlet.

Section 343. At the bottom of every shaft or slope and at every intermediate point where the shaft or slope intersects any lift where employes and material are lowered or hoisted, a passageway not less than five feet high and three feet wide in the clear shall be either cut through the solid strata or constructed of masonry and shall be kept open at all times for persons to pass around said shaft or slope in going from one side thereof to the other.

Section 344. The escapement shafts or slopes shall be fitted with safe and available appliances by which the persons employed in the mine may readily escape in case an accident occurs deranging the hoisting machinery at the main outlet.

Section 345. In slopes where the angle of inclination is fifteen degrees or less there must be provided a separate traveling way which shall be maintained in a safe condition for travel and kept free from steam and dangerous and noxious gases.

Section 346. No inflammable structure other than a frame to sustain sheaves shall be erected over the entrance of any shaft or slope connecting the surface with the underground workings of any mine and no inflammable structure shall be erected within one hundred and fifty feet of any such entrance. Breakers or other inflammable structures for the preparation or storage of coal shall not be erected within two hundred feet of any such entrance. This section shall not prohibit the erection of a fan drift for the purpose of ventilation or of a trestle for the transportation of cars from any shaft or slope to such breaker or structure; nor shall it apply to any shaft or slope until the work of development is completed and shipment of coal has commenced.

Section 347. Where a breaker is now erected over a shaft or slope fire doors to be approved by the inspector shall be installed in said shaft or slope to prevent the passage of smoke or fire from the breaker into the mine, and where intake cannot be otherwise provided a lateral airway shall be so arranged that when the fire doors are closed air may enter the shaft or slope through the airway below the fire doors from a point not less than two hundred feet distant from the breaker.

Section 348. Six months after the passage of this act the sides, roof and bottom of every slope, airway, traveling-way and every other opening to the surface, except cave-ins, shall be made incombustible for at least thirty feet from the mouth and all cave-ins as far as practicable shall be so secured that fire from the surface cannot enter the mine. This work shall be done to the satisfaction of the inspector. Upon proper cause shown and upon the recommendation of the inspector an extension of time not to exceed thirty days may be granted by the Chief of the Department of Mines.

Section 349. The top of all shafts and slopes and any intermediate lift of shafts or slopes, where the angle of inclination is forty-five degrees or more, shall be securely fenced off by railing or by vertical or flat gates.

Section 350. Every abandoned shaft, slope, air-hole or drift shall be properly fenced around or across its entrance and said fencing shall always be maintained in good condition.

Section 351. All underground entrances to any places not in actual course of working shall be properly fenced across the whole width of such entrances so as to warn persons against entering.

Section 352. Any person, co-partnership, association or corporation failing or neglecting to comply with any of the provisions of this article shall be guilty of a misdemeanor and upon conviction thereof shall be sentenced to pay a fine of two hundred and fifty dollars, or the person or the member of any such co-partnership or association and the officer or director of any such corporation with

guilty knowledge of the same shall be sentenced to undergo imprisonment not exceeding thirty days or both at the discretion of the court.

ARTICLE XVIII

Sinking of Shafts

Section 370. The owner, operator, superintendent or contractor shall erect over every shaft that is being sunk or shall hereafter be sunk a safe and substantial structure to sustain sheaves, ropes and loads at a height of not less than twenty feet above the tipping place. The top of such shaft and landing platform shall be so arranged that no material can fall into the shaft while the bucket is being emptied. Said structure shall be erected as soon as a substantial foundation is obtained and in no case shall a shaft be sunk to a depth of more than fifty feet without such structure.

Section 371. If provisions are made to land the bucket on a truck, the truck shall be so constructed that material cannot fall into the shaft.

Section 372. Rock and coal taken from shafts that are being sunk shall be hoisted in a bucket or on a cage and said bucket or cage must be connected with the rope or chain by a safety hook, clevis or other safe attachment. The rope shall be securely fastened to the shaft of the drum and at least three coils of rope shall always remain on the drum. Shafts one hundred feet or more in depth shall be provided with guides and guide attachments applied in such a manner as to prevent the bucket from swinging while being lowered or hoisted, and such attachments shall be maintained at a distance of not more than seventy-five feet from the bottom.

Section 373. An efficient brake shall be attached to every drum of an engine used for sinking shafts, and all machinery, ropes and chains connected therewith shall be examined once every day by a competent person appointed by the owner, operator, superintendent or contractor.

Section 374. Where the strata are not safe every shaft shall be cased, lined or otherwise made secure.

Section 375. The following rules shall be observed in sinking a shaft:

(a) After every blast the chargeman must see that all loose material is swept down from the timbers before the workmen descend to their work;

(b) Before any person is lowered into a shaft liberating explosive gas the person in charge shall have the shaft examined by a competent person with an approved safety lamp, and before and after the firing of each blast the same precautionary measures shall be taken;

(c) Not more than four persons shall be lowered or hoisted in any shaft on a bucket at the same time and no person shall ride on a loaded bucket;

(d) Whenever in sinking shafts men are employed on platforms the person in charge must see that said platforms are properly and safely constructed;

(e) While shafts are being sunk all blasts therein must be exploded by electricity.

Section 376. Any owner, operator, superintendent, contractor or other person who violates any of the provisions of this article shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than fifty dollars or more than two hundred and fifty dollars at the discretion of the court.

ARTICLE XIX

Openings on Lands Owned or Controlled by Persons Other Than the Owner or Operator

Section 390. The owner, operator or superintendent of any mine to which there is only one shaft, slope or outlet, may petition the court of common pleas of the county in which such mine is situated setting forth that in consequence of intervening lands between the working of his mine and the most practicable point or the only practicable point as the case may be, he is unable to make an additional shaft, slope or outlet to the surface in accordance with the requirements of this act. Whereupon the court may appoint three disinterested persons residents of the county as viewers at least one of whom shall be a practical mining engineer. Said viewers after being sworn to faithfully discharge their duties shall view and examine the premises and determine as to whether the owner should have the privilege of making an additional outlet through or upon any intervening lands as the case may require, and shall report their findings in writing to the court. Such report shall be entered and filed of record. If the finding of the viewers or any two of them is in favor of the owner or operator of such coal mine or colliery he may make an additional shaft, slope or outlet under, through or upon intervening lands in such manner as may be determined upon and provided for by the award. If the finding of the viewers is against the owner or operator, or if no award be made by reason of any default or neglect on the part of the owner or operator, he shall be bound to comply with the provisions of this act in the same manner as if this section had not been enacted.

Section 391. In case the owner, operator or superintendent desires to and claims that he ought to make an additional opening under, through or upon any adjoining or intervening lands to meet the requirements of this act, he shall make a statement of the facts in the petition with a survey, setting forth the point of commencement and the point of termination of the proposed outlet, and the owner, operator or superintendent and their engineers, agents or employes may enter upon said intervening lands and survey and mark such land for such additional outlet, doing as little damage as possible to the property explored. Upon the presentation of such petition the court shall appoint three viewers as provided in section three hundred and ninety, who shall have the same powers and perform the same duties and make like report as provided in said section.

Section 392. In either of the aforesaid cases the viewers shall state in their report what damage will be sustained by the owner or owners of the intervening lands by the opening, constructing and using of any such outlet, and if the report is not appealed from it shall be confirmed, modified or rejected by said court. Any fur-

ther proceedings in relation thereto shall be in conformity with the proceedings as in the case of a lateral railroad across or under intervening lands under an act entitled "An act regulating lateral railroads," approved the fifth day of May, one thousand eight hundred and thirty-two, and the amendments and supplements thereto, so far as the provisions of the same are applicable thereto. All notices to the owner of intervening lands of the intention to apply for the privilege of making an outlet and the meeting of the viewers shall be given and the costs of the case shall be paid as provided in said act of fifth May, one thousand eight hundred and thirty-two and the amendments and supplements thereto.

ARTICLE XX

Boundary Pillars

Section 400. The owner or operator of every mine shall leave a pillar of coal in each seam worked along the lines of adjoining mines or properties of such width, that taken in connection with the pillar to be left by the land owner or operator of the adjoining property, it will leave a barrier sufficient to safeguard life and property in case the mine or mines of either property should be filled with water or endangered from any other cause.

Section 401. Whenever a gangway, airway, breast or any other opening in a mine has reached within three hundred feet of any boundary line of any adjoining mine or property, the mine foreman shall supend work in said opening until the width of the pillar necessary to safeguard life and property shall have been decided upon. The mine foreman shall notify the inspector who shall look into the matter and with the engineer of both properties shall forthwith decide the width of the pillar required.

The surveys of the face of the workings along such pillar shall be made in duplicate and must practically agree. A copy of such duplicate surveys, certified to, must be filed with the owners of the adjoining properties and with the inspector of the district.

Section 402. If the inspector and said engineers shall fail to agree on the width of said pillar the matter in dispute shall be referred to the Chief of the Department of Mines, and if he is not able to amicably settle the dispute, he shall select three disinterested engineers who shall decide upon the width of said pillar and their decision shall be final. The cost of the investigations made by the three engineers so selected shall be paid jointly by said land owners and operators.

Section 403. Upon petition of the operators or the superintendents of adjoining mines to the Chief of the Department of Mines a barrier pillar that has served its purpose and is no longer necessary for safety, may be removed if the board that established the pillar gives its approval in writing. In case the members of the board have died or are incapacitated, the Chief of the Department of Mines shall appoint a new board to act in the matter.

Section 404. Any landowner or operator who shall fail or neglect to comply fully with section four hundred of this article shall be

guilty of a misdemeanor and be subject to the penalties provided in article forty-one. In addition thereto such owner or operator shall be liable to the owner or operator of the adjoining property in a sum equivalent to treble the value of the coal mined beyond the boundary line established, said sum to be recovered with costs of suit by action of trespass. No prosecution by indictment shall be a bar to such action.

ARTICLE XXI

Use of Electricity

Definitions

Section 420. The definitions of terms contained herein shall be as follows:

Potential and Voltage. The terms "potential" and "voltage" are synonymous and mean electrical pressure.

Difference of Potential. The term "difference of potential" means the difference of electrical pressure existing between any two points of an electrical system or between any point of such system and the earth as determined by a volt meter.

Potential of a Circuit. The potential or voltage of a circuit machine or any piece of electrical apparatus is the potential normally existing between the conductors of such circuit or the terminals of such machine or apparatus.

(a) Where the conditions of the supply of electricity are such that normally the difference of potential between any points in the circuit does not exceed two hundred and fifty volts, the supply shall be deemed a low voltage.

(b) Where the conditions of the supply of electricity are such that the difference of potential between any two points in the circuit may at any time exceed low voltage but normally does not exceed five hundred volts, the supply shall be deemed a medium voltage.

(c) Where the conditions of the supply of electricity are such that the difference of potential between any two points in the circuit at any time exceeds medium voltage, the supply shall be deemed a high voltage.

Grounding. Grounding any part of an electric system shall consist in so connecting such part to the earth as to insure at all times a proper path for the immediate discharge of electrical energy.

Explosion or Flame-proof Casings or Enclosures. "Explosion or flame-proof casings or enclosures" are those which when completely filled with a mixture of methane and air and the same is exploded are capable of either entirely confining the products of such explosion within the casing or of so discharging them from the casing that they cannot ignite a mixture of methane and air combined in proportions most sensitive to ignition and entirely surrounding the points of discharge and in most intimate proximity therewith.

Underground Station. An "underground station" is herein considered as any place where electrical machinery including transformers is permanently installed.

SPECIAL RULES

General

Section 421. The following rules relating to the installation and use of electricity in mines shall be observed as far as is practicable.

1. All electrical apparatus and conductors shall be sufficient in power and size and of proper design for the work they may be called upon to do, sufficiently protected, efficiently covered and safeguarded and so installed, worked and maintained as to reduce danger from accidental shock or fire to the minimum and shall be of such construction and so worked that the rise in temperature caused by ordinary working will not injure the insulating materials.

2. No higher voltage than low voltage shall be used underground except for transmission or for application to transformers or other apparatus in which the whole of the high voltage circuit is stationary.

3. When high voltage cables are taken into the mine unless they are mechanically protected they shall be taken through a bore hole suitable for the purpose or through a shaft or slope where no employes are lowered or hoisted therein or through a tunnel, drift or gangway where no employes travel into an underground station from which point low or medium voltage may be conveyed. All high voltage circuit cables or conductors shall be properly insulated.

4. In gaseous mines high voltage transmission cables shall be installed in the intake airways only and high voltage motors and transformers shall be installed only in underground stations ventilated by the intake air which has not passed through or by a gaseous district.

Precautions Against Shock

5. Gloves or mats of rubber or other suitable insulating material shall be provided and used by persons engaged in making repairs and adjustments to the live parts of any electrical apparatus.

Electrician

6. At every mine where electricity is used below ground for power, there shall be a competent electrician who shall have full charge of all the electrical apparatus in the mine, but who shall be subject to the authority of the mine foreman.

Restoration from Shock

7. Instructions shall be posted in every generating, transforming and motor-room and at the entrance to the mine containing directions as to the restoration of persons suffering from electric shock. All employes working in connection with electrical apparatus shall be familiar with and know how to carry out these instructions.

Report of Defective Equipment

8. Any of the following occurrences shall be promptly reported to the mine foreman:

(a) A breakdown or damage or injury to any portion of the electrical equipment in a mine.

(b) Overheating.

(c) The appearance of sparks or arcs outside of enclosing casings or

(d) The becoming alive of any portion of the equipment not a part of the electrical circuit.

Underground Stations

9. In underground stations where switchboards are installed there shall be a passageway in front of the switchboard not less than three feet in the clear.

When low voltage is used insulating floors or mats shall be provided where live metal work is on the front of the board.

When high voltage is used there shall be no live metal work on the front of the main switchboard within seven (7) feet of the floor or platform, and the space back of the board shall be kept locked, but the lock shall allow of the door being opened from the inside without the use of a key and the floor back of the board shall be made of incombustible material.

10. No person except an electrician shall enter an underground station or interfere with the working of an apparatus connected therewith.

11. Fire buckets filled with clean, dry sand or other standard extinguishers for electrical fires shall be kept in underground stations ready for immediate use in extinguishing fires.

Transmission Circuits and Conductors

12. Low pressure conductors may be bare except in gaseous portions of a mine.

13. Every branch power circuit shall be provided at the point where it leaves the main circuit with a switch of not less than one hundred ampere capacity on each pole.

14. In underground roads the trolley wires shall be installed as far to one side of the passageway as is practicable and securely supported on insulated hangers placed at such intervals that the sag between points of support shall not exceed three inches. The sag between points of support may exceed three inches if the height of the trolley wire above the rail is six feet or more and does not touch the roof when the trolley passes under it.

15. All other wires except telephone, shot firing and signal wires shall where practicable be on the same side of the road as the trolley.

16. All landings and partings where men are required to regularly work or pass under trolley or other bare power wires which are placed less than six and one-half feet above top of rail a suitable protection shall be provided. This protection may consist of channeling the roof, placing boards along the wires, which shall extend below them or the use of other approved devices that afford protection.

17. All underground power wires and cables in hoisting shaft or manway compartments shall be efficiently insulated and substantially fixed in position. Shaft cables not capable of sustaining their own weight shall be properly supported at intervals according to the weight of the cables. Where the cables are not completely boxed in

and protected from falling material space shall be left between them and the sides of the shaft so that they may yield when struck and thus lessen the blow given by the falling material.

18. Where the cables or feed wires other than trolley wires in main haulage roads cannot be kept at least twelve inches from any part of the mine car or locomotive, they shall where practicable be specially protected by guards.

19. When main or other roads are being repaired or blasting is being carried on suitable temporary protection from damage shall be given the cables.

20. Trailing cables for portable machines shall be specially flexible, heavily insulated and protected with extra stout braiding, hose pipe or other equally effective covering.

21. Each trailing cable in use shall be daily examined by the machine operator for abrasions and other defects and he shall also carefully observe the trailing cable while in use and shall at once report any defect to the mine foreman.

22. Any trailing cable in service that breaks down or becomes damaged in any way or inflicts a shock upon any person shall at once be put out of service. Such faulty cable shall not again be used until it has been repaired and tested by a properly authorized person.

23. In gaseous portions of mines a fixed terminal box shall be provided at the points where trailing cables are attached to the power supply. This terminal box shall be flame-proof and shall contain a switch and fuse on each pole of the circuit. The switch shall be so arranged that it can only be operated from without the box when the latter is completely closed and the switch shall also be so constructed that the trailing cables cannot be detached or removed when the switch is closed.

Switches, Fuses and Circuit-Breakers

24. All points at which a circuit other than a signal circuit has to be made or broken shall be provided with proper switches. The use of hooks or other makeshifts is prohibited except that connection for gathering locomotives or locomotives and machines used in driving headings or rooms may be made to the trolley by means of suitable hooks. Switches shall be so installed that they cannot be closed by gravity. In any gaseous portion of a mine switches, circuit-breakers or fuses shall not be of the open type, but shall be enclosed in explosion-proof casings or break under oil.

Motors

25. In a gaseous portion of a mine where gas is likely to be encountered all stationary motors unless placed in such rooms as are separately ventilated with intake air, shall have all their current carrying parts, also their starters, terminals and connections completely enclosed in explosion-proof enclosures made of non-inflammable material. These enclosures shall not be opened except by an electrician, and then only when the power is switched off. The power shall not be switched on while the enclosures are open.

26. Motors used for operating fans in non-gaseous mines where they are so situated that they are not under constant supervision of a competent man shall be totally enclosed (not necessarily explosion-

proof) unless placed in a chamber or passageway completely lined with incombustible material and the chamber or passageway itself free from combustible material.

27. In working places where gas is likely to be encountered a safety lamp or other suitable apparatus for the detection of explosive gas shall be provided for use with each machine when working and should any indication of explosive gas appear on the flame of the safety lamp, or other apparatus used for the detection thereof, the person in charge shall immediately stop the machine, cut off the current at the nearest switch and report the matter to the mine foreman.

28. No person shall be placed in charge of a coal-cutting machine in any gaseous portion of a mine who is not competent and capable of determining the safety of the roof and sides of the working place and of detecting the presence of explosive gas.

29. In a gaseous portion of a mine a coal-cutting machine shall not be brought within the last cross-heading next the working face until the machine-man shall have made an inspection for gas in the place where the machine is to work, unless such examination is then made by some other competent person authorized or appointed for that purpose by the mine foreman. If explosive gas is found in the place the machine shall not be taken in.

30. No coal-cutting machine shall be continued in operation in a gaseous portion of a mine for a longer period than half an hour without an examination as above described being made for gas and if gas is found the current shall at once be switched off the machine and the trailing cable shall forthwith be disconnected from the power supply.

31. The person finding gas shall at once report the fact to the fire boss or the mine foreman, and the machine shall not again be started in such place until the fire boss or a person duly authorized by the mine foreman has examined it and pronounced it safe.

32. The person in charge of a coal-cutting machine or drilling machine shall not leave the machine while it is working and shall before leaving the working place see that the current is cut off from the trailing cables.

33. In a gaseous portion of a mine if an electric sparking or arc is produced outside of a coal-cutting or other portable motor or by the cable or rails the machine shall be stopped and not be worked again until the defect is repaired and the occurrence shall be reported to the mine foreman.

Electric Locomotives

34. Haulage by electric locomotives operated from a trolley wire is not permissible in any gaseous portion of a mine except in the intake air fresh from the outside.

35. In no case shall the potential used in the trolley system be higher than low voltage.

36. Storage battery locomotives shall be used in gaseous mines only when the boxes containing the cells and all electrical parts are enclosed in flame and explosion-proof casings.

Electric Lighting

37. Arc lamps shall not be used in gaseous mines except under conditions where trolley locomotives are allowable.

38. If arc lamps are used in the mines they shall be of the enclosed arc type.

39. In all mines the sockets of fixed incandescent lamps shall be of the so-called "weather-proof" type, the exterior of which shall be entirely non-metallic. Flexible lamp connections are prohibited except for portable lamps as hereinafter provided.

40. In a gaseous portion of a mine except where ventilated by fresh intake air, incandescent lamps shall be protected by gas-tight fittings of strong glass, except that lamps of two hundred and twenty volts or higher and of not more than eight candle power and without tips need not be so protected.

41. Incandescent lamps shall be so placed that they cannot come in contact with combustible material.

42. Portable incandescent lamps other than battery lamps shall not be used except in connection with the repair and inspection of machines and equipment and then only in non-gaseous portions of mines. When so used they shall be protected by a heavy wire cage completely enclosing both lamp and socket, and shall be provided with a handle to which both cage and socket are firmly attached and through which the leading-in wires are carried.

43. Electric lamps shall be replaced by a competent person only and in gaseous portions of a mine only after an examination for gas has been made with a safety lamp.

Shot Firing by Electricity

44. Electricity from any grounded circuit shall not be used for shot-firing.

45. When shot-firing cables or wires are used in the vicinity of power or lighting conductors special precautions shall be taken to prevent the shot-firing cables or wires from coming in contact with the light, power or any other circuit.

46. Any miner or any other person who has the necessary training and skill and who has been properly instructed in the work and duly authorized by the mine foreman shall be allowed to fire shots electrically in any mine.

47. Portable shot-firing machines sometimes called generators shall be enclosed in a tightly constructed case when employed in any portion of the mine. All contacts when made or broken shall be within the case except that the binding posts for making connections to the firing leads may be outside.

48. All portable devices for generating or supplying electricity for shot-firing when in a mine shall be in charge of the person firing the shots.

49. No firing machine or battery shall be connected to the shot-firing leads until all other steps preparatory to the firing of a shot have been completed and all persons have moved to a place of safety.

50. Immediately after the firing of a shot the firing lead shall be disconnected from the supply or source of electricity and no per-

son shall approach a shot which has failed to explode until the firing leads have been so disconnected from the device and an interval of five minutes has elapsed since the last attempt to fire the shot.

Electric Signaling

51. All proper precautions shall be taken to prevent electric signal and telephone wires from coming into contact with other electrical conductors whether insulated or not.

52. Bells, wires, insulators, contact-makers and other apparatus used in connection with electric signaling underground shall be of suitable design of substantial and reliable construction and erected in such a manner as to reduce the liability of failures or false signals to a minimum.

53. In a gaseous portion of a mine the potential used for signaling purposes shall not exceed twenty-four volts and bare wires shall not be used for signal circuits except in haulage roads.

Electric Relighting of Safety Lamps

54. If in any place or portion of a mine in which safety lamps are used they are relighted underground by electricity, the mine foreman shall select a suitable station or stations which are not in the return airway and where there is not likely to be any accumulation of inflammable gas and no electric relighting apparatus shall be used in any other place. All electric relighting apparatus shall be securely locked and shall not be available for use except by persons authorized by the mine foreman to relight safety lamps and such persons shall examine all safety lamps brought for relighting before they are reissued.

Plan of Electrical System

Section 422. A plan shall be kept at the mine showing the location of all stationary electrical apparatus in connection with the mine electrical system including permanent cables, conductors, lights, switches and trolley lines. The plan shall be of sufficient size to show clearly the position of such apparatus and the scale shall not be less than two hundred feet per inch. There shall be stated on the plan the capacity in horse-power of each motor and in kilowatts of each generator or transformer and the nature of its duty. Such plans shall be corrected as often as may be necessary to keep them up to date at intervals not exceeding six months.

Section 423. Any person who neglects or fails to comply with any of the provisions of the foregoing rules or who shall wilfully damage or without authority alter or make connections to any portion of a mine electrical system shall be guilty of a misdemeanor, and upon conviction shall be subject to a fine of not less than fifty dollars or more than five hundred dollars at the discretion of the court.

ARTICLE XXII

Inspection by Employes

Section 430. When a fatal accident occurs at any mine the majority of the employes of the mine may at their own expense appoint

from their number two practical miners with at least five years' experience who, together with their legal adviser or with a mining or an electrical engineer selected by them, shall be allowed to go to the place where the accident occurred and to make such inspection and investigation as may be necessary to ascertain its cause. All such inspections and investigations shall be subject to the provisions of this act requiring that the place where an accident occurs shall be left in the same condition it was in immediately after the accident.

Section 431. Every facility shall be afforded by the officials and employes for the purpose of such inspection. Any mine foreman or any other person who refuses or neglects to afford such facilities or interferes with such inspection shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than twenty-five dollars or more than one hundred dollars at the discretion of the court.

ARTICLE XXIII

Miners' Examining Boards

Section 440. No person shall be employed as a miner unless he has obtained a certificate of qualification as such from the Miners' Examining Board of the proper district and has been duly registered as herein provided.

Section 441. For the purpose of examination of applicants for certificates as miners and for registration of miners a board to be known as the Miners' Examining Board shall be appointed as hereinafter provided in each inspection district. Such board shall be composed of three skilful miners in actual practice in the inspection district who shall have had at least five years' practical experience in mining.

Section 442. On the first Tuesday in January, one thousand nine hundred and eighteen and every two years thereafter, a Miners' Examining Board shall be appointed in each of the inspection districts by the judges of the court of common pleas of Lackawanna county for all inspection districts wholly or in part in the counties of Lackawanna, Sullivan, Susquehanna and Wayne and by the judges of the court of common pleas of Luzerne county for all inspection districts wholly or in part in the counties of Luzerne and Carbon and by the judges of the court of common pleas of Schuylkill county for all inspection districts wholly or in part in the counties of Schuylkill, Northumberland, Columbia and Dauphin. The boards so appointed shall hold office until their successors are appointed and duly qualified. Any vacancy in a board shall be filled for the unexpired term by the court that made the appointment in the first instance.

Section 443. Each board shall organize by electing one of its members as president and one as secretary.

Section 444. The members of each board shall within ten days of their appointment take and subscribe to an oath or affirmation before a properly qualified officer of the county in which they reside that they will faithfully and impartially discharge the duties of their office.

Section 445. Each board shall designate a convenient place within its district for meetings which shall be duly advertised in two or more newspapers of the proper county circulating as nearly as practicable in all the mining districts therein. Each board shall meet once every month and not oftener.

In no case shall a meeting be held in a building where intoxicating liquors are sold.

The meetings shall be public and shall cover whatever portion may be required of a period of three days in succession.

Section 446. The members of each board shall receive as compensation three dollars a day for each day actually employed and all legitimate and necessary expenses incurred in attending the meetings of the board. Such compensation shall be paid out of the moneys received from applicants for examination and certificates and for registration.

Section 447. The board shall examine under oath all persons who desire to be employed as miners in their respective districts and shall grant certificates of qualification as miners to such persons as may be qualified. Such certificates shall be good and sufficient evidence of competency and registration under this act and the holders thereof shall be entitled to be registered without an examination in any other of the anthracite inspection districts upon payment of the fee herein provided.

Section 448. Applicants for certificates of qualification as miners shall be at least twenty-one years of age and shall have had at least two years' experience as a miner, miner's laborer or man of general work in the coal mines of this country or of other countries. Each applicant must appear in person before the Examining Board to answer twelve questions in the English language pertaining to the requirements of a practical miner and demonstrate that he understands the use of the safety lamp and knows how to handle explosives and is competent to do the work of a miner and must also be properly identified under oath as a miner, miner's laborer or man of general work, by at least one practical miner holding a miner's certificate.

Section 449. The board shall keep an accurate record of the proceedings of each meeting which shall show a correct detailed account of the examination of each applicant with the questions asked and their answers and at each of its meetings the board shall keep said record open for public inspection. No miner's certificate granted under the provisions of this act or any prior act shall be transferable to any person whatsoever. Any such transfer shall be a violation of this act. Certificates shall be issued only at meetings of said board and shall not be legal unless then and there signed by the three members of the board.

Section 450. Each board shall open at the designated place of meeting a book of registration in which shall be registered the name and address of every person in the district duly qualified as a miner under this act or prior acts. It shall be the duty of all miners to be properly registered in the inspection district in which they are employed.

Section 451. In case a miner removes from a district in which he is registered to another district he shall register in the district to which he has removed. Application for registration only may be sent by mail to the board. Such application shall be properly attested before a person authorized to administer oaths or affirmations in the county in which the applicant resides. The form of application shall be subject to such regulation as may be prescribed by the board. In no case shall an applicant be put to any unnecessary expense in order to secure registration.

Section 452. Each applicant for examination, registration and for the certificate herein provided shall pay a fee of one dollar to the Board. A fee of twenty-five cents shall be charged for registering any person who shall have been examined and registered by any other board. The money derived from this source shall be held by the board and applied to the compensation and expenses herein provided and such other expenses as may arise under the provisions of this act. The boards shall report annually to the court of common pleas of their respective counties and to the Department of Mines all moneys received and disbursed under the provisions of this act, together with the number of miners examined and registered and the number who failed to pass the required examination.

Section 453. Nothing in this act shall be construed in any way to affect miners' certificates which have been issued under prior acts, except as herein provided.

Section 454. To carry out the provisions of this act the members of the boards shall have power to administer oaths.

Section 455. No mine foreman or superintendent shall permit or suffer any person to be employed in the mines under his charge as a miner who does not hold a miner's certificate.

Section 456. Any person who shall violate or fail to comply with the provisions of this article shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than one hundred dollars or more than five hundred dollars or by imprisonment for a term of not less than thirty days or more than six months or both at the discretion of the court.

Section 457. The Miners' Examining Board shall investigate all complaints or charges of non-compliance or violation of the provisions of this article and shall prosecute all persons so offending. Upon their failure to do so the district attorney of the county wherein the complaints or charges of non-compliance are made shall investigate the same and prosecute all persons so offending. The district attorney shall prosecute all such members of the Miners' Examining Board as have failed to perform their duty under the provisions of this article. Nothing herein contained shall prevent any citizen a resident of the Commonwealth from prosecuting any person or persons violating this article and such private person may employ private counsel to assist in the prosecution of the same. Upon conviction of any member of a Miners' Examining Board for any violation of this article in addition to the penalties provided in section four hundred and fifty-six the court that made the appointment in the first instance shall declare the office vacant and said member shall be ineligible to act on said board.

ARTICLE XXIV

Special Rules

Duties of Miner

Section 470 (a). No miner shall fire a blast in any mine or in any portion of a mine where locked safety lamps are used, except by permission of the mine foreman, assistant mine foreman or fire boss. Before any such blast is fired one of the said officials shall examine the place and all adjoining places and satisfy himself that it is safe to fire the blast before he gives permission.

(b) A miner who is about to fire a blast shall notify all persons who may be in danger therefrom and shall give sufficient alarm before and after igniting the fuse or squib so that any person who may be approaching shall be warned of the danger.

(c) A miner whether using black powder, high explosives or other explosives shall tamp the hole complete to the mouth irrespective of whether it is fired by electricity, fuse or squib and in charging the hole he shall use only one kind of explosive.

(d) A miner who is preparing to explode a blast by the use of a fuse shall cut the fuse of sufficient length so that it will protrude at least six inches outside of the hole and shall light it at the extreme end in order that he may have ample time to reach a place of safety.

(e) No miner charging holes for blasting coal, slate or rock shall use an iron or steel tamping bar, unless the end is tipped with at least six inches of copper or other soft metal; nor shall he use an iron or steel-pointed needle, unless the end is tipped with at least twelve inches of copper or other soft metal. He shall see that the diameter of the bits of all drills used in drilling holes for explosives is at least one-quarter of an inch larger than the diameter of the cartridge in use, so as to prevent the forcing of a cartridge into a hole.

(f) A miner who is about to explode a blast by the use of a squib shall not shorten the match or saturate it with oil or turn it down when placed in a hole or ignite it except at the extreme end nor shall he do any other thing to shorten the time the match will burn.

(g) A miner who ignites a feeder of gas by a blast or otherwise shall immediately extinguish it, if possible. If he is unable to do so he shall at once notify the mine foreman, assistant mine foreman or fire boss. Immediately before leaving his working place the miner shall see that no gas blowers are left burning.

(h) No miner shall withdraw a charge of any explosive from a hole that has misfired, nor shall he reopen the same, but he shall drill a new hole at a distance of not less than two feet from the old hole and fire the same.

(i) A miner having charge of a working place shall keep the roof and sides thereof properly secured by timber or otherwise, and he shall not do any work, nor shall he permit any work to be done under loose or dangerous material, except for the purpose of securing the same.

(j) A miner shall order props, cap-pieces and timbers necessary at least one day in advance of needing them as provided for in the rules of the mine. If he fails to receive the same and finds his place becoming unsafe, he shall vacate it until the necessary timbers are supplied and the place made secure.

(k) No miner shall remove props or timbers that are supporting the roof or sides except by blasting or some other safe method.

(l) A miner working a breast or any other place shall before commencing work and also after the firing of every blast enter said breast or other working place to ascertain its condition, and his laborer or assistant shall not go to the face of said breast or working place until the miner has examined it and found it to be safe.

(m) A miner who has black powder or any other explosive in his

possession shall keep it in a wooden or metallic box securely locked and at least ten feet from the tracks where space at that distance is available.

(n) A miner when opening a box containing explosives or when handling explosives shall first place his lamp at a distance of not less than five feet therefrom and in such position that the air current cannot convey sparks to the explosives, and he shall not approach with a lighted lamp, pipe or any other thing containing fire nearer than five feet to an open box containing explosives.

Duties of Footman

Section 471. (a) The footman shall be at his proper place at the bottom of the shaft or slope from the time that persons begin to descend until all persons who may be at the bottom of the shaft or slope when quitting work at the end of the shift have been hoisted. He shall personally attend to the signals and see that the provisions of this act in respect to the hoisting of persons out of shafts or slopes are complied with.

(b) He shall inform the engineer by signal or otherwise when any person is about to ascend a shaft or slope and the engineer shall return the signal before starting the engine. In the absence of the footman outside of working hours the person about to ascend shall give and receive the signals in the same manner.

(c) He shall not allow tools to be placed on the same carriage with persons who are being hoisted, unless the same are laid flat on the bottom of the carriage.

(d) The footman shall report to the mine foreman any violation of General Rule six, Article thirty-seven of this act.

Duties of Topman

Section 472. (a) The topman shall be at his proper place at the top of the shaft or slope from the time that persons begin to descend until all the persons who may be at the bottom of the shaft or slope when quitting work at the end of the shift have been hoisted. He shall personally attend to the signals and see that the provisions of this act in respect to the lowering of persons into shafts or slopes are complied with.

(b) He shall inform the engineer by signal or otherwise when any person is about to descend a shaft or slope and the engineer shall return the signal before starting the engine. In the absence of the topman outside of working hours a person about to descend shall give and receive the signals in the same manner.

(c) He shall not allow tools to be placed on the same cage or carriage with persons who are being lowered into the mine, unless the same are laid flat on the bottom of the carriage.

(d) The topman of a shaft, slope or plane shall be careful to see that all safety blocks or other devices to prevent runaway cars from entering the shaft, slope or plane are properly closed and in no case left open when persons are riding therein. The safety blocks or other devices shall not be withdrawn until the cars on top of the slope or plane are coupled to the rope or chain and the proper signal given.

(e) The topman of a shaft shall see that the fans or keeps for the cage to rest upon are properly operated and that no material which can be prevented is allowed to fall down such shaft.

(f) The topman shall report to the outside foreman any violation of General Rule six, Article thirty-seven, of this act.

Duties of Hoisting Engineer

Section 473. (a) The engineer in charge of an engine by which persons are lowered into and hoisted out of a mine shall be a sober and competent person of not less than twenty-one years of age.

(b) He shall operate his engine with care and in such manner that in lowering or hoisting persons the car, cage, carriage or gunboat shall not exceed a speed of one thousand feet per minute in shafts and five hundred feet per minute in slopes. No person shall interfere with the engineer while in the discharge of his duties.

(c) The engineer who has charge of the hoisting machinery by which persons are lowered into and hoisted out of a mine shall handle the engine with great care and shall be in constant attendance for that purpose during the whole time any person is below ground. He shall not allow any person (except such as may be designated by the foreman in charge) to run said engine nor shall he allow anyone to interfere with any part of the machinery.

(d) No person engaged as a hoisting engineer, part of whose duties it is to lower persons into and hoist them from the mine, shall be so employed for a longer period than eight hours out of each day of twenty-four hours.

(e) In a shaft or slope when the engine has been standing idle for one hour or more, an empty trip shall be hoisted as a precautionary measure before any person shall be permitted to ride therein.

Duties of Fireman

Section 474. The fireman in charge of a boiler or boilers for the generation of steam at any mine or colliery shall keep constant watch over the same and shall see that the steam pressure does not at any time exceed the limit allowed by the outside foreman or the superintendent. He shall frequently try the safety valves and shall not increase the weight thereon and shall maintain a proper depth of water in each boiler. If anything should happen to prevent this he shall notify the foreman in charge without delay and take such other action as may under the particular circumstances be necessary for the protection of life and preservation of property.

Duties of Fan Engineer.

Section 475. The engineer in charge of a ventilator shall keep it running at such speed as the mine foreman shall direct in writing. He shall report promptly to the mine foreman or an assistant mine foreman any great change in the pressure gauge or any other serious defect. In case of an accident to the machinery he shall immediately notify the mine foreman or an assistant mine foreman. If only ordinary repairs are needed he shall await the instruction of the mine foreman or an assistant mine foreman before stopping the fan, but if it becomes necessary to stop it to prevent its destruction he

shall stop it and shall forthwith notify the superintendent or outside foreman who shall immediately give warning to the persons in the mine.

Duties of Driver

Section 476. When a driver has occasion to leave his trip he must be careful to see that it is left when possible in a safe place and where it will not endanger the drivers of other trips. He must take care while taking his trip down grade to have the brakes or sprags so adjusted that the trip is kept under control. He shall not leave any cars standing where they may materially obstruct the ventilation, except in case of an accident which he shall promptly report to the mine foreman or an assistant mine foreman. He shall not allow any person to ride on loaded cars or to drive his horses or mules.

Duties of Motorman or Locomotive Engineer

Section 477. (a) The motorman or locomotive engineer shall keep a sharp lookout ahead and sound the whistle or alarm bell frequently when coming near cross-over switches or branches and shall not exceed the speed of six miles per hour.

(b) The motorman shall see that the motor cables and controlling parts are kept clean and in a safe working condition and that the headlight is burning when the motor is in motion. He shall not allow any person, except those delegated by the mine foreman, to ride on the motor or loaded cars.

Section 478. Any miner, footman, topman, hoisting engineer, fireman, fan engineer, driver, motorman or locomotive engineer or any other person who fails or neglects to comply with or who violates any of the provisions of the foregoing rules shall be guilty of a misdemeanor and upon conviction shall be punished by a fine of not less than twenty-five dollars or more than one hundred dollars at the discretion of the court.

ARTICLE XXV

Emergency Hospitals

Section 480. Every mine shall be provided with a room inside and a room outside to be known as the emergency hospitals so that medical treatment may be promptly given therein to injured employes. Such hospitals shall be erected at a convenient place in the mine, and on the surface, and shall not be less than eight feet by twelve feet in size. They shall be supplied with a sufficient quantity of linseed oil or picric acid and gauze bandages, splints and woolen and waterproof blankets. They shall be sufficiently furnished and lighted and ventilated and shall be cleanly kept. The furnishings shall be sufficient to accommodate at least two persons in a reclining and sitting posture.

Section 481. The mine foreman or assistant mine foreman in case of a serious personal injury to an employe from any cause, shall at once visit the scene of the accident and see that the injured person is properly cared for, wrapped in woolen blankets, and removed to the emergency hospital inside, and there treated in such manner as will add to his comfort and ease. The mine foreman shall see that immediately thereafter the injured person shall be wrapped up and

sent to the surface and taken to his home or to a hospital without expense to the injured party. Whenever an accident to an employe involves injury to limbs or causes loss of blood, the mine foreman or his assistants shall see that the bandages, splints and linen shall be applied where necessary. The mine foreman shall keep a book showing the required articles on hand and used, the name of the person injured, the nature of the injury, the treatment administered at time of accident and by whom.

Section 482. Any person who neglects or refuses to perform the duties required of him by this article or who violates any of the requirements hereof shall be guilty of a misdemeanor, and upon conviction shall be punished by a fine of not less than fifty dollars or more than one hundred and fifty dollars, at the discretion of the court.

ARTICLE XXVI

First Aid Corps and Rescue Corps

Section 490. The superintendent of every mine shall provide one first aid corps if fifty to two hundred persons are employed inside and he shall provide one additional first aid corps for every additional one person to two hundred persons employed inside.

Section 491. The superintendent of every gaseous mine where explosive gas is liberated in sufficient quantity to be detected by an approved safety lamp shall provide one rescue corps if fifty to two hundred persons are employed inside, and he shall provide one additional rescue corps for every additional one person to two hundred persons employed inside.

Section 492. The superintendent of every mine employing less than fifty persons inside shall upon request of the inspector in writing provide a first aid corps and a rescue corps.

Section 493. Each first aid corps and each rescue corps shall consist of five strong and intelligent persons recruited from officials and volunteers among the employes after a medical examination, and shall be properly trained by those in charge of such work and paid at the usual rate of wages for the time spent in training.

Section 494. The superintendent of every mine where first aid corps and rescue corps are required shall establish a station in which he shall provide and maintain in good working condition a sufficient number of rescue helmets of the most modern type and a sufficient supply of oxygen to enable the helmets to be in constant use for a period of forty-eight hours, a sufficient number of electric and approved safety lamps, resuscitating apparatus, and all other appliances necessary in rescue work, and also facilities to transport promptly the equipment from the station to the place where it may be needed.

Section 495. A company or companies operating two or more mines where first aid corps and rescue corps are required, may establish a central station if the mines are located in a group and not more than five miles from the central station and are connected by telephone and telegraph. At each such station the superintendents of such mines shall provide and maintain in good working condition all the equipment required in section four hundred and ninety-four of this act.

Section 496. The superintendents and the inspectors shall adopt

such rules and regulations for the conduct and guidance of the persons employed in first aid and rescue work as may appear best for the good of the service.

Section 497. Any superintendent or other person who fails or neglects to comply with any of the provisions of this act shall be guilty of a misdemeanor and upon conviction thereof in the court of quarter sessions shall be punished by a fine of not less than fifty dollars or more than two hundred and fifty dollars.

ARTICLE XXVII

Ambulances and Stretchers

Section 510. The owner, operator or superintendent of every mine at which twenty or more persons are employed shall provide and keep in good condition at the principal entrance to the mine or at such other place as the superintendent and inspector may determine and designate, one motor ambulance and at least two stretchers for conveying to their places of abode persons who may be injured while in the discharge of their duties. The owner, operator or superintendent shall also provide and keep in good condition a sufficient supply of woolen and waterproof blankets. When two or more mines are located within one mile of each other or when the ambulance is lodged within one mile of each mine only one such conveyance shall be required if such mines have ready and quick means of intercommunication by telephone or telegraph. If the places of abode of all the employes are within a radius of a half mile from the principal entrance to a mine, such ambulance shall not be required. Two stretchers shall be kept in readiness at all times at mines where less than twenty persons are employed.

Section 511. The ambulance shall be constructed upon good substantial easy springs. It shall be covered and closed and have windows on the sides or ends and shall be provided with spring mattresses or other comfortable bedding placed on roller frames, together with sufficient covering and protection for the convenient movement of the injured. It shall be of sufficient size to convey at least two injured persons and two attendants at one time, and shall be provided with sufficient seats for the same. The stretchers shall be constructed of such material and in such manner as to insure ease and comfort in the carriage of the injured persons.

Section 512. Whenever an employe in or about a mine shall receive such an injury as to render him unable to walk to his place of abode, the superintendent shall immediately have him conveyed thereto or to a hospital as the case may require.

Section 513. If the conditions are such that the person injured can be conveyed to his home or to the hospital more conveniently and more quickly by railroad, trolley road or otherwise, such mode of conveyance shall be permitted, but in such cases the conveyance must be under cover and the comfort of the injured person must be provided for.

Section 514. Any owner, operator or superintendent who fails or neglects to carry out the provisions of this article shall be guilty of a misdemeanor, and upon conviction shall be punished by a fine of not less than fifty dollars or more than one hundred dollars at the discretion of the court.

ARTICLE XXVIII

Regulations for Explosives and Detonators

Section 530. No black powder, high explosives or permissible explosives shall be stored in a mine and not more than twenty-five pounds of any one of them shall be taken into a mine at one time by any one person unless more is required for one shift.

Section 531. Black powder, high explosives, permissible explosives and detonators shall always be handled with care and used in accordance with the printed instructions issued by the manufacturer. When hauled on an electric motor trip in or about any mine they shall be encased in non-conductive boxes or receptacles.

Section 532. No person shall thaw any explosive inside or outside the mine except by the method recommended by the manufacturer.

Section 533. Detonators shall at all times be kept separate and apart from other explosives until required for use.

Section 534. Black powder, high explosives or permissible explosives used at a colliery shall be stored in separate buildings, which shall be built of incombustible material, and shall be rifle bullet proof. Detonators must be kept in an annex which must also be fireproof. No open lights shall be permitted in either building. These buildings shall be erected at least two hundred and fifty feet from shafts, slopes, breakers and boiler houses where persons are employed.

Section 535. Buildings where high explosives or permissible explosives are stored for daily use shall be heated by steam or hot water, and kept at a temperature as directed by the manufacturer. No frozen explosives shall be sold to any employe or distributed to or used by any employe.

Section 536. High or permissible explosives shall not be sold for use in mines unless the name of the manufacturer and the name and grade of explosives are stamped on each stick and the method of handling and full instructions for use are conspicuously displayed on and in the original box or package containing the explosives.

Section 537. Any person, co-partnership, association or corporation failing or neglecting to comply with any of the provisions of this article shall be guilty of a misdemeanor and upon conviction shall be punished by a fine of not less than fifty dollars or more than one hundred dollars at the discretion of the court.

ARTICLE XXIX

Weight of Black Powder

Section 550. After the passage of this act every keg of black blasting powder sold or used in and about any mine shall be standard weight and shall contain twenty-five pounds. Each half keg shall contain twelve and one half pounds and each quarter-keg shall contain six and one-quarter pounds. Every keg shall be plainly stamped with the name of the person, co-partnership, association or corporation manufacturing the powder and also with the number of pounds it contains.

Section 551. Only the person, co-partnership, association or corporation whose name is stamped or inscribed on a keg shall be allowed to refill the keg with black powder.

Section 552. Any manufacturer, dealer, person, co-partnership, association or corporation who violates any of the provisions of sections five hundred and fifty and five hundred and fifty-one of this article, or any superintendent who buys or any person who offers for sale any black powder contrary to the provisions of this article, shall be guilty of a misdemeanor and upon conviction shall be punished by a fine of not less than five hundred dollars and not more than one thousand dollars at the discretion of the court.

ARTICLE XXX

Regulations for Oil

Section 560. The oiling or greasing of cars inside of a mine is strictly prohibited unless the place where said oil or grease is used is thoroughly cleaned at least once every day to prevent the accumulation of oil or grease on the roads or in the drains at that point. Not more than one barrel of lubricating oil shall be permitted in any mine at one time and it shall be kept in a fire-proof place cut out of the solid rock or made of masonry or concrete of sufficient thickness to insure safety.

Section 561. No explosive oil shall be taken into any mine except for use in safety lamps nor shall it be stored in any mine in quantities exceeding five gallons. Explosive oil when stored in a mine shall be kept in a fireproof vault made of concrete or masonry with fireproof doors which when not in use shall be kept locked.

Section 562. All oils used in open lamps shall be non-explosive and free from odors and fumes deleterious to health and shall have a burning point not lower than three hundred degrees. When acetylene lamps are used the quantity of carbide taken into the mine by each person shall be limited to such quantity as may be necessary for his daily use. The use of acetylene lamps shall be subject to the approval of the inspector.

Section 563. Paraffin wax for use in a mine shall not contain over three percentum of oil.

Section 564. All illuminants sold for use in open lamps in mines shall have branded conspicuously on the barrel or receptacle containing the same the name of the manufacturer, the burning point and the date of shipment.

Section 565. Any employe who shall use, and any mine foreman who shall permit to be used, and any person, co-partnership, association or corporation who shall sell for use in a mine, oil or other material for illuminating purposes other than as prescribed by this article, shall be guilty of a misdemeanor and upon conviction shall be punished by a fine of not less than fifty dollars or more than one hundred and fifty dollars at the discretion of the court.

ARTICLE XXXI

Code of Signals

Section 580. In all shafts and slopes where persons, coal and materials are hoisted by machinery the following code of signals shall be used:

(a) One rap or whistle—to hoist coal or material or to stop carriage, cage or gunboat at any time when in motion.

(b) Two raps or whistles—to lower car, carriage, cage or gunboat.

(c) Three raps or whistles—to hoist persons. The engineer shall signal back when ready after which the persons shall get on the car, carriage, cage or gunboat and then one rap or whistle shall be given the engineer to hoist.

Section 581. Any person who shall neglect or fail to comply with the provisions of this article shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than ten dollars or more than fifty dollars at the discretion of the court.

ARTICLE XXXII

Boilers and Connections

Section 590. All boilers used for generating steam about a mine or colliery shall be kept in a safe condition and the superintendent shall have them examined by a qualified person at least once every six months or oftener, if necessary. A report of each examination shall be made in writing and certified under oath to the inspector within thirty days thereafter.

Section 591. No boiler used for generating steam shall be placed nearer than one hundred feet to any breaker or other structure in which persons are employed.

Section 592. Each nest of boilers shall be provided with a safety valve of sufficient area to permit the escape of steam and the weights or springs thereon shall be properly adjusted.

Section 593. Steam gauges shall be properly connected with the boilers to indicate the steam pressure and a steam gauge shall be attached to the main steam pipe in the boiler and engine house and placed in such a position that the engineer and fireman in charge can readily see what pressure is being carried. All steam gauges shall be kept in good working order and shall be tested and adjusted on every general inspection and a report thereof shall be made to the inspector.

Section 594. Any superintendent or other person who fails or neglects to comply with any of the provisions of this article shall be guilty of a misdemeanor and upon conviction shall be punished by a fine of not less than fifty dollars or more than one hundred and fifty dollars at the discretion of the court.

ARTICLE XXXIII

Inside Stables and Buildings

Section 610. No horse or mule stable shall be provided inside of any mine, unless the space occupied thereby is excavated in solid strata of rock, slate or coal. If such excavation is in the coal seam a wall shall be built of brick, stone or concrete not less than eight inches in thickness along the face of the coal from the bottom slate to the roof or the face of the coal shall be entirely cased in with incombustible material. In the construction of said stable wood or other combustible material shall not be used except for a floor where the animals stand.

Section 611. No hay or straw shall be taken into any mine unless pressed and made into compact bales. All such hay and straw shall

be kept in a store-house built apart from the stable and in the same manner as the stable. Under no circumstances shall hay or straw be stored in the stable. No open lights shall be used in any stable, store-house, or at any other place in the mine where hay or straw is handled.

Section 612. The air current used for the ventilation of a stable shall not be intermixed with the air current used for ventilating any other portion of the mine.

Section 613. All buildings inside of a mine including engine houses, pumphouses, stables, et cetera, shall be built of incombustible material approved in writing by the inspector.

Section 614. The enforcement of this article is charged to the mine foreman and any mine foreman who fails or neglects to enforce compliance with the provisions of this article shall be guilty of a misdemeanor, and upon conviction, shall be punished by a fine of not less than fifty dollars or more than one hundred and fifty dollars, at the discretion of the court.

ARTICLE XXXIV

Wash Houses

Section 630. The owner, operator or superintendent of a colliery shall, at the request in writing of five or more of the employes, provide a suitable building, not an engine or boiler house, convenient to the principal entrance for the use of the employes for the purpose of washing themselves and changing their clothes when entering the mine and returning therefrom. The said building shall be maintained in good order and in a healthful and sanitary condition. It shall be properly lighted and heated and shall be supplied with pure cold and hot water and with proper facilities for the employes to wash.

Section 631. Any owner, operator or superintendent who shall fail or neglect to comply with the provisions of this article, or any person who shall maliciously injure or destroy or cause to be injured or destroyed the said building or any part thereof or any of the appliances or fittings used for supplying light, heat and water therein, or do any act tending to the injury or destruction thereof, shall be guilty of a misdemeanor and upon conviction shall be punished by a fine of not less than fifty dollars or more than one hundred and fifty dollars at the discretion of the court.

ARTICLE XXXV

Employment of Minors.

Section 640. No minor under fourteen years of age and no female of any age shall be employed or permitted to work in or about the outside operations of any mine or colliery, and no minor under the age of sixteen years and no female of any age shall be employed or permitted to work inside any mine. This section does not prohibit the employment of females over fourteen years of age in office or clerical work at a colliery subject to the existing laws regulating the employment of females.

Section 641. Before any minor under the age of sixteen years shall

be permitted to work in or about the outside operations of any mine or colliery the employer shall procure and keep on file an employment certificate issued to said minor as required by the laws of this Commonwealth, which shall at all times be accessible to the inspector. The certificate shall, however, remain the property of the minor, to whom it shall be returned when he or she quits the service of the employer who holds it. A complete list of all minors under the age of sixteen years employed at any colliery shall be kept on file at the superintendent's office.

Section 642. If it shall appear to the inspector that any minor is employed who is under the required age the inspector shall make written demand upon the outside foreman, if such minor is employed outside, or upon the mine foreman if such minor is employed inside, that he furnish him within ten days with the same evidence that such minor is of the legal age as is required for the issuance of an employment certificate, or failing to do so he shall cease to employ or permit such minor to work. In case the outside foreman or the mine foreman fails to furnish the required evidence of age as demanded and continues to employ or permit such minor to work, proof of the making of such demand, failure to produce the evidence required and continuing such minor in his employ, shall be prima facie evidence of the illegal employment of such minor in any prosecution brought therefor.

Section 643. Any superintendent, outside foreman, or mine foreman who shall employ any minor contrary to or in violation of any of the provisions of this article, shall be guilty of a misdemeanor, and upon conviction be subject to a fine of not less than one hundred dollars or more than two hundred and fifty dollars.

ARTICLE XXXVI

Check System

Section 650. At every mine where more than two hundred persons are employed inside a check system shall be adopted whereby each person before being allowed to enter the mine shall show a check with a number on it to the topman or person in charge whose duty it shall be to prevent any person from entering the mine unless he has such check in his possession. Upon return of the employe from the mine he shall deposit his check with an official or in a place designated by the mine foreman.

Section 651. If any checks are not returned within the period of two hours after the end of a regular day's work the said official in charge shall immediately notify the mine foreman of the fact, who shall at once make an investigation to discover the cause.

Section 652. Such check system shall be uniform and shall be approved by the Chief of the Department of Mines.

Section 653. The superintendent is charged with the enforcement of this article and any superintendent or other person who neglects or fails to comply with the provisions of this article shall be guilty of a misdemeanor, and upon conviction shall be punished by a fine of not less than twenty-five dollars or more than one hundred dollars, at the discretion of the court.

ARTICLE XXXVII

General Rules

Section 660. Rule 1. No unauthorized person shall have in his possession a key or any other contrivance for the purpose of unlocking a safety lamp in a mine where approved locked safety lamps are used, nor shall matches or other means for striking light be taken into such mine.

Rule 2. No safety lamp shall be entrusted to any person for use in a mine until said person has given satisfactory evidence to the mine foreman that he understands the proper use thereof and the danger of tampering with the same.

Rule 3. No person shall ride upon or against any loaded car, cage or gunboat in any shaft, slope or plane in or about any mine.

Rule 4. No driver or other person shall descend or ascend a shaft in company with a mule or horse.

Rule 5. Not more than ten persons shall be hoisted or lowered at any one time in any shaft or slope. Whenever five persons or more shall arrive at the bottom of a shaft or slope in which persons are regularly hoisted or lowered they shall be furnished with an empty car, cage, carriage or gunboat and be hoisted, except in mines where there is provided a traveling-way having an average pitch of fifteen degrees or less, and not more than one thousand feet in length. This rule shall not prohibit the hoisting or lowering of twenty persons at one time in any slope where two or more loaded cars are regularly hoisted, if at any such slope not less than thirty persons working therein make such a request in writing of the inspector and if in his judgment the hoisting appliances are of sufficient strength in every respect.

Any superintendent or mine foreman who prevents the footman from giving an empty car, cage, carriage or gunboat as designated in this rule shall be guilty of a misdemeanor and shall upon information given the inspector, be fined the sum of fifty dollars for each offence.

Rule 6. No person except the man giving the signal shall jump on a car, cage or carriage after the signal to start has been given and if any person shall enter a car, cage or carriage in excess of the lawful number the topman or footman as the case may be, shall notify him of the fact and request him to get off, which request shall be immediately complied with. Any violation of this rule shall be reported promptly to the mine foreman or the outside foreman who shall forthwith notify the inspector to that effect.

Rule 7. No explosive shall be stored in a mine and no person shall have at any one time in any one place more than twenty-five pounds, unless more is necessary for him to accomplish one day's work.

Rule 8. When high explosives are used in a mine the manner of storing, keeping, moving, charging, firing or using them shall be in accordance with special rules furnished by and endorsed with the official signature of the manufacturer and approved by the superintendent in writing. No person shall use any explosives, detonators, caps, squibs or fuses except those approved in writing by the superintendent.

Rule 9. Any person who has any explosive shall keep the same in a wooden or metallic box securely locked and at least ten feet from the tracks in all cases where space at that distance is available.

Rule 10. Any person when opening a box containing explosives or when handling the same shall place his lamp at a distance of at least five feet therefrom and in such position that the air current cannot convey sparks to the explosives, and he shall not approach with a lighted lamp, pipe or any other thing containing fire nearer than five feet to an open box containing explosives.

Rule 11. No person who is not a practical miner shall charge or fire a blast in the absence of an experienced miner, unless he has given satisfactory evidence of his ability to do so with safety and has obtained permission from the mine foreman.

No person shall be employed to blast coal or rock unless the mine foreman is satisfied that he is qualified to perform the work with ordinary safety.

Rule 12. When a workman is about to fire a blast he shall be careful to notify all persons who may be in danger therefrom and shall give sufficient alarm before and after igniting the match or fuse or if the blast is fired by electricity, before the wires are connected, so that any person approaching shall be warned of the danger.

Rule 13. No accumulation of gas in mines shall be removed by brushing where it is practicable to remove the same by bratticing.

Rule 14. When a person ignites a feeder of gas he shall immediately extinguish it, if possible, but if unable to do so he shall at once notify the mine foreman, assistant mine foreman or fire boss of the fact.

Rule 15. Motors propelled by steam shall not be used in any passageway which is also used as an intake airway in any mine or portion thereof where persons are employed or where employes have to travel.

Rule 16. No person other than a person employed by the mine foreman for that particular work shall run cars out of a breast on a gravity road or in any other place.

Rule 17. No person shall travel on any gravity plane while cars are being hoisted or lowered thereon. Whenever five persons arrive at the top or the bottom of any plane on which it is necessary for men to travel, traffic thereon shall be suspended for a period of time long enough to permit them to reach the top or the bottom.

Rule 18. No person except employes shall be allowed to enter any mine without permission from the superintendent and no person in a state of intoxication shall be allowed to go into any mine.

Rule 19. No person shall go into an abandoned portion of a mine, or into any other place that is not in actual course of working, without permission from the mine foreman; and no person shall travel to or from his work, except by the traveling-ways assigned for that purpose.

Rule 20. No person shall commit any nuisance, or throw into or deposit or leave dirt, stones or other rubbish, in any airway so as to interfere with or pollute the air passing into and through the mine.

Rule 21. No props or timbers that are supporting roof or sides shall be removed except by blasting or other safe method.

Rule 22. No person shall couple or uncouple cars while they are in motion. This rule shall not apply to the topmen or the bottommen of shafts, slopes or planes.

Rule 23. When cars are run on gravity roads by brakes or sprags, the runner only shall ride on the rear end of the last car, and when the cars are controlled by sprags, there shall be a space of at least two and one-half feet from the body of the car to the rib and said space shall be made on one side or both sides of the track and shall be kept free from obstruction. This rule shall not apply to gravity roads constructed prior to the passage of this act.

Rule 24. Safety holes shall be made at the bottom of all slopes and planes, where coal is hoisted or lowered, and kept free from obstruction to enable the footman to escape readily in case of danger.

Rule 25. Any employe who shall discover anything wrong with the ventilating current or with the condition of the roof, sides, timber or roadway, or with any other part of the mine in general, that would lead him to suspect danger to himself or to his fellow-workmen or to the property of his employer, shall immediately report the condition to the mine foreman or to any other person for the time being in charge of that portion of the mine.

Rule 26. Any person who shall knowingly or wilfully damage, remove or render useless any danger signal, fencing, means of signaling, electric wires, apparatus, instruments or machine, or shall obstruct any airway or open a ventilating door and not have the same closed, or pass beyond a danger signal or carry fire, open lights or matches into places where approved locked safety lamps are in use, or deface, pull down or destroy any notice required to be posted by this act, or disturb any machinery or cars, or do any other act or thing whereby the lives or health of the employes or the safety of the property of the operator in or about a mine or colliery may be endangered, or any person who fails to comply with any of the provisions of the foregoing rules, shall be guilty of a misdemeanor and upon conviction shall be punished by a fine of not less than twenty-five dollars or more than two hundred dollars, at the discretion of the court.

ARTICLE XXXVIII

Inquests

Section 670. Whenever loss of life occurs from any cause in a mine or on the surface or whenever a serious accident of an unusual nature occurs, or whenever a condition arises that menaces the safety of the employes the superintendent shall forthwith give notice thereof by telegraph, telephone or special messenger to the inspector.

Section 671. Whenever loss of life occurs or whenever the lives of the employes are endangered the inspector shall visit the scene of the accident as soon as possible after being notified and offer such suggestions as in his judgment shall be necessary to safeguard the lives of the employes and the property of the operator.

Section 672. The condition of the place or the scene of a fatal accident shall not be disturbed or altered except for the purpose of preventing additional loss of life or personal injury or for the repairing of damage that may affect safety in other parts of the mine, until the inspector has visited the scene and given permission to the mine foreman to do so.

Section 673. In case of a death if, after a thorough examination, the inspector is of the opinion that a coroner's inquest is necessary,

he shall notify the coroner to hold an inquest without delay and if no inquest is called within twenty-four hours after giving notice to the coroner the inspector shall make a fuller examination into the cause of the accident, and for this purpose he shall have power to compel the attendance of witnesses at such examination and to administer oaths or affirmations to persons testifying thereat. The inspector shall make record of all such investigations which shall be preserved in his office. The cost of such investigation shall be paid by the county in which the accident occurred in like manner as costs of inquests held by coroners or justices of the peace are now paid.

Section 674. An inquest held by the coroner shall be adjourned, if the inspector is not present to watch the proceedings, and the coroner in such cases shall notify the inspector in writing of such adjournment and the time and place of holding the inquest at least three days prior thereto. At all such inquests the inspector and any representative of a party in interest shall have the right to examine witnesses and read the law governing the case to the coroner's jury.

Section 675. If at any such inquest the inspector is not present and it is shown by the evidence given that the accident was caused by neglect or by any defect in the mine or on the surface which in the judgment of the jury requires a remedy, the coroner shall send notice in writing to the inspector of such neglect or default.

Section 676. No person who is interested personally and no person employed in the mine or on the surface when such accident has occurred shall be qualified to serve on a jury or be empaneled on the inquest, and a constable or other officer shall not summon as a juror such a person so disqualified, but the coroner shall empanel a majority of the jurors from the miners who are qualified to judge of the nature of the accident.

Any person who fails to comply with any of the provisions of this article shall be guilty of a misdemeanor and upon conviction shall be punished by a fine of not less than twenty-five dollars or more than two hundred and fifty dollars, at the discretion of the court.

ARTICLE XXXIX

Location of Mine, Jurisdiction of Courts, Injunctions

Section 690. A mine is located within the meaning of this act in the county where the mouth or opening or the greater portion thereof is located, irrespective of the geographical location of the underground workings, and the courts of the county where the mouth or opening or the greater part thereof is situate shall have jurisdiction of all matters and questions arising under this act. Where a mine has two openings which are located in different counties the courts of such counties shall have concurrent jurisdiction.

Section 691. Upon application of the inspector in the name of the Commonwealth the court of the proper county or any judge thereof, whether any other proceedings have or have not been taken, shall prohibit by injunction or otherwise the working of any mine or colliery in contravention of the provisions of this act and may award such costs in said injunction or other proceedings as the court or judge thereof may think proper. This section shall be enforced without prejudice to any other remedy permitted by law for enforcement

of the provisions of this act. Written notice of the intention to apply for such injunction in respect to any mine or colliery shall be made to the owner, operator or superintendent of such mine or colliery not less than twenty-four hours before the application is made.

ARTICLE XL

Records, Forms and Printed Matter

Section 700. The Department of Mines shall furnish without cost to the operators and to the examining boards on application all forms, blanks, reports, record books and printed matter required by the provisions of this act.

ARTICLE XLI

Penalties

Section 710. The crimes and offences against this act hereinbefore provided for shall be prosecuted in the same manner and according to the same procedure as other crimes and offences are prosecuted under the laws of this Commonwealth or in lieu of such procedure any judge of the court of quarter sessions of the county in which the mine or colliery at which the offence, act or omission as hereinafter stated has occurred is situated is hereby authorized and required upon the presentation to him of the affidavit of the district attorney of the proper county, or upon the affidavit of any citizen of said county, setting forth that the owner, operator or superintendent or any other person employed in or about such mine or colliery, has been guilty of an offence against the provisions of this act, whereby a dangerous accident had resulted to any person or persons employed in such mine or colliery, to issue a warrant to the sheriff of said county directing him to cause such person or persons to be arrested and brought before said judge. The judge shall hear and determine the guilt or innocence of the person or persons so charged and if convicted he or they shall be sentenced to pay a fine of not less than twenty-five dollars or more than five hundred dollars or undergo an imprisonment in the county jail for a period not exceeding thirty days or both, at the discretion of the court. Any defendant may waive trial before a judge as herein provided and at any time at or before the time of such trial demand a trial by a jury in the court of quarter sessions. In such case he shall enter into a recognizance before said judge with such surety or sureties and in such sums as said judge may approve, conditioned for his appearance at the next court of quarter sessions to answer to the charge against him and abide the order of the court in the premises, meanwhile to be of good behavior and keep the peace or in default of such recognizance to be committed to the county jail to await such trial.

Section 711. If any such person shall feel himself aggrieved by such conviction and sentence before a judge or a judge and jury as aforesaid, he may appeal therefrom, subject to the following conditions, namely: the appellant shall within seven days after the decree has been made give notice to the prosecutor of his intention to appeal and within the same time enter into a recognizance with such surety or

sureties and in such sum as shall be approved by said judge conditioned to appear and try such appeal before the next court of quarter sessions and to abide the judgment of the court thereon and to pay all such costs and penalties as may be there awarded and upon the compliance with such conditions the judge shall release the appellant from custody pending the appeal.

Section 712. Nothing in this act shall prevent any person from being indicted or liable under any other act to any higher penalty or punishment than is herein provided, and if the court before whom any such proceedings are held shall be of the opinion that proceedings ought to be taken against such person under any other act or otherwise he may adjourn the case to enable such proceedings to be taken.

Section 713. All offences under this act are declared to be misdemeanors and every person found guilty of an offence against this act shall, except as herein otherwise specifically provided, be subject to a fine not exceeding five hundred dollars or to imprisonment in the jail of the proper county for a period not exceeding thirty days or both, at the discretion of the court.

Any offence under this act committed by a corporation shall constitute a misdemeanor and upon conviction the offending corporation shall, except as herein otherwise specifically provided, be subject to a fine of not more than one thousand dollars and its officers, directors or agents or any of them participating in such violation shall, upon conviction, be sentenced to pay a fine of not more than five hundred dollars or to undergo imprisonment in the county jail of the proper county for a period not exceeding thirty days or both, at the discretion of the court.

Section 714. For any violation of duty by the inspector prescribed in this act he shall be guilty of a misdemeanor and upon conviction shall, except as herein otherwise specifically provided, be sentenced to pay a fine of not more than three hundred dollars or to be imprisoned for a period not exceeding thirty days or both, at the discretion of the court.

Section 715. All fines imposed under this act shall be paid into the treasury of the county wherein the proceedings are had for the use of the county.

Section 716. No conviction or acquittal under this act in any complaint shall be received in evidence upon the trial of any action for damages arising from the negligence of any owner, operator or superintendent or employe in any mine or colliery.

Section 717. For any injury to person or property occasioned by any violation of this act or any failure to comply with the provisions by any owner, operator or superintendent of any mine or colliery, a right of action shall accrue to the party injured against said operator for any direct damages he may have sustained thereby, and in case of loss of life by reason of such neglect or failure aforesaid a right of action shall accrue to the widow and lineal heirs of the person whose life has been lost for like recovery of damages for the injury they have sustained, subject, however, in all cases to the provisions of "The Workmen's Compensation Act" of one thousand nine hundred and fifteen, and any present or future amendment thereto.

ARTICLE XLII

Employers' Liability

Section 730. Nothing in this act shall be taken or construed to repeal in any manner by implication or otherwise an act approved the second day of June, one thousand nine hundred and fifteen, entitled "An act defining the liability of an employer to pay damages for injuries received by an employe in the course of employment, establishing an elective schedule of compensation and providing procedure for the determination of liability and compensation thereunder."

ARTICLE XLIII

Repeal

Section 740. All acts or parts thereof inconsistent herewith be and the same are hereby repealed.

CAUSES AND LOCATION OF FATAL ACCIDENTS

The records for the year show that as usual the two principal causes of fatal accidents in the anthracite mines were (1) falls of coal, slate and roof, and (2) cars. The total number of inside fatal accidents was 497, of which 218 or 43.86 per cent. were caused by falls of coal, slate and roof, and 67 or 13.48 per cent. by cars. The other causes were explosions of gas, 43 or 8.65 per cent.; explosions of powder and dynamite, 13 or 2.62 per cent.; electricity, 9 or 1.81 per cent.; blasts, 66 or 13.28 per cent.; falling into shafts and slopes, suffocation by gas and miscellaneous causes, 81 or 16.30 per cent.

The accidents by falls of coal occurred as follows: at face of working places, 46; at pillar work, 8; on gangways while timbering and repairing, 2; on gangways while riding on cars, 2; a total of 58, or 26.61 per cent. By falls of slate at face of workings, 19; at pillar work, 3; on gangways while timbering and repairing, 2; on slopes, 1; at mouth of tunnel, 1; in old workings, 1; a total of 27 or 12.38 per cent. By falls of roof at face of workings, 104; at pillar work, 10; on gangways while timbering and repairing, 14; on gangways while riding on cars, 1; at foot of slope, 1; while repairing shaft, 1; on plane, 1; in tunnel, 1; a total of 133 or 61.01 per cent.

The total number of fatal accidents by falls of coal, slate and roof at face of working places was 169 or 77.52 per cent. of all accidents from falls; at pillar work, 21 or 9.63 per cent.; on gangways while timbering and repairing, 18 or 8.26 per cent.; on gangways while riding on cars, 3 or 1.37 per cent.; on slopes, 1 or .46 per cent.; at foot of slope, 1 or .46 per cent.; at mouth of tunnel, 1 or .46 per cent.; in tunnel, 1 or .46 per cent.; in old workings, 1 or .46 per cent.; while repairing shaft, 1 or .46 per cent.; on planes, 1 or .46 per cent.

Sixty-seven persons were killed by cars, 44 of whom were killed on gangways, 12 on slopes, and 11 at other places.

Sixty-six persons were killed by blasts and thirteen were killed by explosions of powder and dynamite on gangways and at other places.

Of the accidents on the surface, 29 or 42.65 per cent. were caused by cars; 15 or 22.06 per cent. by machinery, and 24 or 35.29 per cent. by other causes.

The table submitted herewith shows the accidents in each inspection district by falls and other causes.

These reports show 141 miners killed by falls; 112 or 79.43 per cent. were killed at face of working places; 19 or 13.48 per cent. while removing pillars; 9 or 6.38 per cent. on gangways while timbering and repairing and 1 or .71 per cent. in old workings. Of the 141 fatalities, 92 or 65.25 per cent. were due to the carelessness or ignorance of the victims, 1 or .71 per cent. to the carelessness of others and 48 or 34.04 per cent. were unavoidable.

Six miners were killed by cars; 2 or 33.33 per cent. on gangways; 1 or 16.67 per cent. on plane; 2 or 33.33 per cent. on slopes and 1 or 16.67 per cent. in chamber. Of the 6 fatalities, 2 or 33.33 per cent. were due to carelessness or ignorance of the victims, 2 or 33.33 per cent. to the carelessness of others and 2 or 33.34 per cent. were unavoidable.

Twenty-four miners were killed by explosions of gas: 13 or 54.17 per cent. in chambers; 5 or 20.83 per cent. on gangways; 3 or 12.50 per cent. on slopes and 3, or 12.50 per cent. in old workings. Of the 24 fatalities, 14 or 58.33 per cent. were due to the carelessness or ignorance of the victims, 1 or 4.17 per cent. to the carelessness of others, 4 or 16.67 per cent. were unavoidable and for 5 or 20.83 per cent. the responsibility was not defined.

Six miners were killed by explosions of powder and dynamite; 2 or 33.33 per cent. were killed at face of workings; 1 or 16.67 per cent. on gangways and 3 or 50.00 per cent. in cross headings. The 6 fatalities were due to the carelessness or ignorance of the victims.

Fifty-two miners were killed by blasts. Of the 52 fatalities, 41 or 78.85 per cent. were due to the carelessness or ignorance of the victims, 2 or 3.85 per cent. to the carelessness of others and 9 or 17.30 per cent. were unavoidable.

One miner killed by falling down shaft, through the carelessness of others.

One miner killed by falling down slope, through his own carelessness.

Four miners killed by falling down chamber. Of the 4 fatalities 2 or 50.00 per cent. were due to carelessness or ignorance of the victims and 2 or 50.00 per cent. were unavoidable.

One miner killed by falling down rock hole, through the carelessness of others.

Four miners killed, crushed at batteries. Of the 4 fatalities 2 or 50.00 per cent. were due to the carelessness or ignorance of the victims and 2 or 50.00 per cent. were unavoidable.

Two miners killed by electricity on gangway, through their own carelessness.

Eight miners suffocated by gas. Of the 8 fatalities 3 or 37.50 per cent. were due to the carelessness or ignorance of the victims, 2 or 25.00 per cent. to the carelessness of others and 3 or 37.50 per cent. were unavoidable.

One miner suffocated by rush of coal and water in chute, through his own carelessness.

One miner suffocated by rush of coal in chute. Accident was unavoidable.

Two miners killed by being struck by coal. One of the fatalities or 50.00 per cent. was due to the carelessness or ignorance of the victim and 1 or 50.00 per cent. was unavoidable.

Two miners killed by being struck by rock. One of the fatalities or 50.00 per cent. was due to the carelessness or ignorance of the victim and 1 or 50.00 per cent. was unavoidable.

Four miners killed by being struck by timber. Three of the fatalities or 75.00 per cent. were due to the carelessness or ignorance of the victims and 1 or 25.00 per cent. was unavoidable.

One miner killed by being struck by drum, through his own carelessness.

Three miners killed by rush of coal. One of the fatalities or 33.33 per cent. was due to the carelessness or ignorance of the victim and 2 or 66.67 per cent. were unavoidable.

One miner killed by rush of water, through his own carelessness.

One miner killed by rush of slush, through his own carelessness.

Two miners killed by rush of rock. One of the fatalities or 50.00 per cent. was due to the carelessness or ignorance of the victim and 1 or 50.00 per cent. was unavoidable.

One miner killed by explosion of air line. Accident was unavoidable.

One miner killed, drowned by falling into old workings, through his own carelessness.

One miner killed, ruptured while lifting timber, through his own carelessness.

One miner killed, scalded while fighting mine fire, through his own carelessness.

Two miners killed, cause unknown.

The total number of miners killed was 274, of whom 181 or 66.06 per cent. were killed through their own carelessness or ignorance, 8 or 2.92 per cent. through the carelessness of others. Seventy-eight of the fatalities or 28.47 per cent. were unavoidable and for 7 or 2.55 per cent. the responsibility was not defined.

Fifty-eight miners' laborers killed by falls; 53 or 91.38 per cent. of whom were killed at face of workings; 2 or 3.45 per cent. while removing pillars and 3 or 5.17 per cent. on gangways while timbering and repairing. Of the 58 fatalities, 23 or 39.65 per cent. were due to the carelessness or ignorance of the victims, 13 or 22.41 per cent. to the carelessness of others and 22 or 37.93 per cent were unavoidable.

Nine miners' laborers killed by cars; 4 or 44.45 per cent. of whom were killed on gangways; 1 or 11.11 per cent. in chambers; 3 or 33.33 per cent. on slopes and 1 or 11.11 per cent. at foot of plane. Of the 9 fatalities, 7 or 77.78 per cent. were due to the carelessness or ignorance of the victims and 2 or 22.22 per cent. to the carelessness of others.

Six miners' laborers killed by explosions of gas; 2 or 33.33 per cent. of whom were killed in chambers, 2 or 33.33 per cent. on gangways and 2 or 33.34 per cent. on slopes. Of the 6 fatalities, 3 or 50.00 per cent. were due to the carelessness or neglect of the victims and for 3 or 50.00 per cent. the responsibility was not defined.

Eight miners' laborers killed by blasts. Of the 8 fatalities 6 or 75.00 per cent. were due to the carelessness or ignorance of the victims and 2 or 25.00 per cent. to the carelessness of others.

Five miners' laborers electrocuted on gangways. Of the 5 fatalities 4 or 80.00 per cent. were due to the carelessness or ignorance of the victims and 1 or 20.00 per cent. was unavoidable.

Three miners' laborers suffocated by gas. Of the 3 fatalities 1 or 33.33 per cent. was due to the carelessness or ignorance of the victim and 2 or 66.67 per cent. were unavoidable.

One miner's laborer suffocated by rush of coal in chamber. Accident was unavoidable.

Seven miners' laborers were killed by explosions of powder and dynamite. Of the 7 fatalities 5 or 71.43 per cent. occurred at face of workings and 2 or 28.57 per cent. in crosscuts. Four or 57.14 per cent. were due to the carelessness or ignorance of the victims and 3 or 42.86 per cent. were unavoidable.

Three miners' laborers killed by rush of coal. Accidents were unavoidable.

One miner's laborer killed by rush of slate through his own carelessness.

One miner's laborer killed by being struck by timber, through the carelessness of others.

One miner's laborer killed by being struck by axe. Accident was unavoidable.

Two miners' laborers killed by being struck by guide. Accidents were unavoidable.

One miner's laborer killed by being kicked by mule, through his own carelessness.

One miner's laborer killed by being scalded while fighting mine fire, through his own carelessness.

One miner's laborer killed by being ruptured while lifting timber. Accident was unavoidable.

One miner's laborer killed by falling off scaffold, through the carelessness of others.

The total number of miners' laborers killed was 109, of whom 52 or 47.71 per cent. were killed through their own carelessness or ignorance, 18 or 16.51 per cent. through the carelessness of others, 36 or 33.03 per cent. were unavoidable and for 3 or 2.75 per cent. the responsibility was not defined.

Thirty drivers and runners were killed. Of this number 3 or 10.00 per cent. were killed by falls on gangways while riding on cars; 1 or 3.33 per cent. by falls on plane; 14 or 46.67 per cent. by cars on gangways; 1 or 3.33 per cent. by cars on slopes; 1 or 3.33 per cent. by cars in tunnels; 1 or 3.33 per cent. by cars at foot of slope; 2 or 6.67 per cent. by explosions of gas on gangway; 2 or 6.67 per cent. by explosions of gas on slope; 1 or 3.33 per cent. by suffocation by gas in old workings; 3 or 10.00 per cent. by being kicked by mules; 1 or 3.34 per cent. ruptured while lifting car. Of the 30 fatalities, 16 or 53.33 per cent. were due to the carelessness or ignorance of the victims, 11 or 36.67 per cent. were unavoidable and for 3 or 10.00 per cent. the responsibility was not defined.

Five company men were killed. Of this number 1 or 20.00 per cent. was killed by fall on gangway while timbering and repairing; 1 or 20.00 per cent. by fall while repairing shaft; 2 or 40.00 per cent.

by cars on gangways; 1 or 20.00 per cent. by explosion of gas on gangway. Of the 5 fatalities, 4 or 80.00 per cent. were due to the carelessness or ignorance of the victims and 1 or 20.00 per cent. was unavoidable.

Seventy-nine other persons were killed, including 1 mine foreman, 4 assistant mine foremen, 3 fire bosses, 10 doorboys and helpers, 9 motormen and assistants, 4 timbermen and rockmen, 4 trackmen, 2 pumpmen, 4 footmen, 1 mason, 3 engineers, 1 surveyor, 1 siltman, 1 slateman, 1 shaftman, 1 bellboy, 5 patchers, 3 bottommen, 1 mucker, 1 muck boss, 3 chargemen, 6 loaders, 1 poleman, 3 starters, 2 switchmen, 1 roadman, 1 driller, 1 safety inspector and 1 repairman. Of the 79 fatalities, 53 or 67.09 per cent. were due to the carelessness or ignorance of the victims, 4 or 5.06 per cent. to the carelessness of others, 20 or 25.32 per cent. were unavoidable and for 2 or 2.53 per cent. the responsibility was not defined.

Of the 497 accidents that occurred inside the mines, 306 or 61.57 per cent. are attributed to the carelessness or ignorance of the victims themselves, 30 or 6.04 per cent. to the carelessness of others, 146 or 29.37 per cent. were unavoidable and for 15 or 3.02 per cent. the responsibility was not defined.

7—3—1916

Causes and Location of Fatal Accidents by Districts, 1916

Inside	Districts																								Totals
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Falls of coal at face	2	2			1	1				1	4	7	2	2	1	1	2	6	2	2	2	1	4	3		46
Falls of coal at pillar work						1	1								1			2				3				8
Falls of coal on gangway while timbering and repairing																						1			1	2
Falls of coal on gangway while riding on cars												1										1				2
Falls of slate at face															1	1		2		3	2		6	2	2	19
Falls of slate at pillar work															1	1						1				3
Falls of slate on gangway while timbering and repairing																					1	1				2
Falls of slate on slope																1										1
Falls of slate at mouth of tunnel																									1	1
Falls of slate in old workings																							1			1
Falls of roof at face	4	5	6	9	3	7	9	11	6	6	2	10	6	6		2	2	1		5	1	1	1	1		104
Falls of roof at pillar work	2			1				2		2						2						1				10
Falls of roof on gangway while timbering and repairing			2			1			1		1		1	3			1			1		2		1		14
Falls of roof on gangway while riding on cars			1																							1
Falls of roof at foot of slope	1																									1
Falls of roof while repairing shaft			1																							1
Falls of roof on plane									1																	1
Falls of roof in tunnel											1															1
Cars on gangway	3		3	2		2	4	1		2	1	6	1	2	1	1	1	2	2	1	3	1		2	3	44
Cars in chamber								1														1				2
Cars on plane										1						1										2
Cars on slope								1	1		2		3			1						1	2	1		12
Cars in tunnel											1											1				2
Cars at foot of slope																					1	1				2
Cars at mouth of tunnel															1											1
Cars at foot of plane													1										1			2
Explosions of gas in chamber					1			2		1	1	2	2	1				1				2	1	1	2	17
Explosions of gas on gangway								2			7	6														15
Explosions of gas in old workings				1					1														1	1		4
Explosions of gas on slope												7														7
Suffocated by gas in chamber														1				3					1			5
Suffocated by gas on gangway															2											2
Suffocated by gas in old workings				1										2												3
Suffocated by gas in chute																									1	1
Suffocated by gas from mine fire in tunnel											2															2

Suffocated by rush of coal in chamber,													1													1
Suffocated by rush of coal on gangway,																								1		1
Suffocated by rush of coal in battery,																									1	1
Suffocated by rush of coal and water in chute,																1										1
Explosions of powder and dynamite at face,		4		2															1							7
Explosions of powder and dynamite on gangway,								1																		1
Explosions of powder and dynamite in heading,								1				1		1					2							5
Blasts, premature and otherwise,	3	3	4	4	2	2	1	6	8	4	8	2	1	4			1		2	1	4	2	1	3		66
Falling down shafts,													1				1					2	1			5
Falling down slopes, etc.,														1	1			1	2		1	1				7
Crushed at batteries,														1	1		1			1	1		1			6
Animals,						1										1			1					1		4
Electricity,						2			1	2				1			2		1								9
Struck by piece of coal,																			1		1					2
Struck by piece of rock,									1							1										2
Struck by timber,										1				1					2		1			1		6
Struck by cage,														1												1
Struck by ax,																				1						1
Struck by guide,																						2				2
Struck by drum,				1																						1
Struck by ice falling down shaft,								1																		1
Rush of coal,																	1		2			1			1	5
Rush of slate,															1											1
Rush of rock,																				1						1
Rush of gob,																									1	1
Rush of slush,																					1					1
Rush of water,															1											1
Falling off scaffold,												1														1
Falling on pulley,														1												1
Scalded while fighting mine fire,																		3								3
Burned by lamp,														1												1
Explosion of air line,							1																			1
Crushed by coal,					2																					2
Drowned by falling into old workings,														1												1
Ruptured,		1								1							1			1						4
Cause unknown,																		1						1		2
Totals,	15	15	17	21	7	19	15	28	22	21	30	42	20	28	14	13	13	18	14	21	17	26	26	18	17	497

Causes and Location of Fatal Accidents by Districts, 1916—Continued

Outside	Districts																								Totals
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Cars,				1	1		1			2		1		2	1	3	4	2	1	1	3	5	1			29
Machinery,		2				1		1		1				1	1	2	1	1		1	1	1	1			15
Electricity,										1																1
Animals,									1																	1
Suffocated in culm chute,		1																								1
Suffocated by rush of coal,							1								1											2
Suffocated by earth caving in,																				2						2
Struck by rope,					1																					1
Struck by timber,												1								1						2
Struck by piece of rock,															1											1
Struck by frozen earth,																		1								1
Struck by bar,														1												1
Falling off breaker,																	1									1
Falling off washery,																								1		1
Falling off trestle,						1																				1
Fall of earth,																					1					1
Explosion of blast,																1										1
Explosion of powder,																					1					1
Explosion of gas,													2													2
Crushed by steam shovel,															1											1
Burned by boilers,																		1								1
Rush of culm,																			1							1
Totals,		3		1	2	2	2	1	1	4		2	2	4	5	6	6	5	2	5	6	6	2	1		68
Grand totals inside and outside,	15	18	17	22	9	21	17	29	23	25	30	44	22	32	19	19	19	23	16	26	23	32	28	19	17	565

CAUSES AND LOCATION OF FATAL ACCIDENTS INSIDE, 1910-1916 INCLUSIVE

This table shows that the causes of accidents and the places they occur are very much the same from year to year. This is especially true of falls of coal, slate and roof that occur at the face, while removing pillars, while repairing gangways or while working at the face of gangways.

The accidents by cars and the explosions of blasts occur from year to year in about the same way and at the same relative places.

During the period covered by the table 1,730 fatal accidents inside were caused by falls or 46.29 per cent. of the total number; 572 by cars, or 15.32 per cent. of the total number; 451 by blasts, or 12.07 per cent. of the total number; 113 by powder explosions, or 3.02 per cent. of the total number and only 256 by explosions of gas, or 6.85 per cent. of the total number.

Most of the victims could have been saved had they used ordinary precaution.

The accidents from blasts and explosives number 15 per cent. and are chargeable directly to the miner who extracts the coal. Of the 2,302 accidents by falls and cars, at least one-half could have been prevented by proper prudence and care on the part of the victims or others.

Causes and Location of Fatal Accidents, Inside, 1910-1916, Inclusive

	1910	1911	1912	1913	1914	1915	1916	Totals	Percentages as to location	Percentages of total accidents inside
By falls of coal, slate and roof										
At face of working places,	173	166	153	197	170	190	169	1,218	70.40	32.59
At pillar work,	31	44	37	34	36	57	21	260	15.03	6.96
On gangways while timbering and repairing,	24	20	36	14	13	13	18	138	7.98	3.69
Back in chambers,	21	15	4					40	2.31	1.07
On slopes,	2	1	1	2	3	3	1	13	.75	.35
At cross headings,	2	2	4	4	2	2		16	.92	.43
In old workings,		1	3		1	3	1	9	.52	.24
In chutes,		1	4					5	.29	.13
In tunnels,		1		1			2	4	.23	.11
In strange chambers,		2						2	.12	.05
In airways,			1	2				3	.17	.08
At bottom of slopes,			1	1			1	3	.17	.08
On planes,			1				1	2	.12	.05
In sumps,			1					1	.06	.03
On gangways while riding on cars,				6	5		3	14	.81	.37
In pump house,					1			1	.06	.03
While repairing shaft,							1	1	.06	.03
Totals and percentages,	253	253	246	261	231	268	218	1,730	100.00	46.29
By cars										
On gangways,	57	47	55	40	45	50	44	338	59.09	9.04
In chambers,	6	11	2	9	6	8	2	44	7.69	1.18
On slopes,	17	18	14	20	18	12	12	111	19.41	2.97
At foot of shafts,	2	4	2	2	1	1		12	2.10	.32
At foot of slopes,	8	5	2	4	2		2	23	4.02	.62
At dump chutes,	2	2						4	.70	.11
In tunnels,		3	1	6	3	4	3	20	3.50	.54
At mouth of drifts,		1						1	.17	.03
On planes,		1	2	5	1	4	2	15	2.62	.40
In drifts,						1		1	.17	.03
At foot of planes,						1	2	3	.53	.08
Totals and percentages,	92	92	78	86	76	81	67	572	100.00	15.32

Causes and Location of Fatal Accidents, Inside, 1910-1916, Inclusive—Continued

	1910	1911	1912	1913	1914	1915	1916	Totals	Percentages as to location	Percentages of total accidents inside
By explosions of gas										
In chambers,	14	13	22	20	31	28	17	145	56.64	3.88
On gangways,	3	9	3	2	------	3	15	35	13.67	.94
In old workings,	2	3	9	4	3	2	4	27	10.55	.72
On slopes,	1	------	------	1	1	------	7	10	3.91	.27
In cross headings,	------	4	------	1	------	------	------	5	1.95	.13
In tunnels,	------	5	------	20	1	------	------	26	10.16	.70
In manways,	------	------	1	------	7	------	------	8	3.12	.21
Totals and percentages,	20	34	35	48	43	33	43	256	100.00	6.85
Suffocated by gas, etc.,	13	*86	5	10	12	10	17	153	100.00	4.09
By explosions of powder and dynamite										
At face of working places,	9	6	9	8	11	5	7	55	48.67	1.47
On gangways,	------	13	12	1	------	2	1	29	25.66	.78
In cross headings,	7	2	4	1	2	1	5	22	19.47	.59
In tunnels,	1	------	------	1	------	------	------	2	1.77	.05
Location not given,	5	------	------	------	------	------	------	5	4.43	.13
Totals and percentages,	22	21	25	11	13	8	13	113	100.00	3.02
By explosions of blasts										
At face of working places,	48	59	46	52	76	69	66	416	92.24	11.13
On gangways,	6	1	------	3	------	------	------	10	2.22	.27
At pillar work,	4	1	------	------	------	------	------	5	1.11	.13
In cross headings,	1	6	4	5	------	------	------	16	3.55	.43
In tunnels,	1	------	------	------	------	------	------	1	.22	.03
In old workings,	------	------	1	------	------	------	------	1	.22	.03
On planes,	------	------	------	2	------	------	------	2	.44	.05
Totals and percentages,	60	67	51	62	76	69	66	451	100.00	12.07
Falling into shafts, slopes, etc.	19	21	18	30	47	19	12	166	100.00	4.44
Crushed at batteries,	3	5	4	3	3	3	6	27	100.00	.72
By electricity,	3	2	5	1	1	4	9	25	100.00	.67
By machinery,	2	4	------	2	------	1	------	9	100.00	.24
Miscellaneous causes,	22	30	31	43	32	31	46	235	100.00	6.29
Grand totals and percentages,	509	615	498	557	534	527	497	3,737	--------	100.00

*Pancoast disaster; 72 men killed.

COMPARATIVE TABLE OF ACCIDENTS

Pennsylvania-United States, 1899-1903-1908-1916

In 1899 the number of employes inside and outside the mines of the United States, not including the bituminous and anthracite mines of Pennsylvania, was 178,526. The production of coal was 120,155,918 net tons. The number of lives lost was 497 or 2.78 per 1,000 employes. The number of lives lost per 1,000,000 tons produced was 4.14, and for every life lost 214,763 tons were produced.

In 1899 the number of employes inside and outside the anthracite mines of Pennsylvania was 140,604. The production of coal was

60,518,331 tons. The number of lives lost was 461 or 3.28 per 1,000 employes. The number of lives lost per 1,000,000 tons produced was 7.62, and for every life lost 131,276 tons were produced.

In 1903 the number of employes inside and outside the mines of the United States was 262,688, not including any Pennsylvania mines, an increase of over 47 per cent. over 1899. The production was 178,409,849 tons, an increase of over 48 per cent. The number of lives lost was 832, an increase of over 67 per cent.

In 1903 the number of employes inside and outside the anthracite mines of Pennsylvania was 151,827, an increase of over 7 per cent. over 1899. The production was 75,232,585 tons, an increase of over 24 per cent. The number of lives lost was 518, an increase of over 12 per cent.

In 1908 the number of employes inside and outside the mines of the United States was 334,095, not including any Pennsylvania mines, an increase of over 87 per cent. over 1899. The production was 217,362,080 tons, an increase of over 80 per cent. The number of lives lost was 1,199, an increase of over 141 per cent.

In 1908 the number of employes inside and outside the anthracite mines of Pennsylvania was 174,503, an increase of over 24 per cent. over 1899. The production was 83,543,243 tons, an increase of over 38 per cent. The number of lives lost was 678, an increase of over 47 per cent.

In 1916 the number of employes inside and outside the mines of the United States, not including any Pennsylvania mines, was 400,535, an increase of over 125 per cent. over 1899. The production was 334,162,000 tons, an increase of over 178 per cent. The number of lives lost was 1,265, an increase of over 155 per cent.

In 1916 the number of employes inside and outside the anthracite mines of Pennsylvania was 159,169, an increase of over 13 per cent. over 1899. The production was 87,680,198 tons, an increase of over 45 per cent. The number of lives lost was 565, an increase of over 23 per cent.

During the eighteen years, 1899-1916, inclusive, the number of employes inside and outside the mines of the United States, not including any Pennsylvania mines, was 5,553,711. The production was approximately 4,049,573,236 tons. The number of lives lost was 21,567, or 3.88 per 1,000 employes and 5.33 per 1,000,000 tons produced. The production per life lost was 187,767 tons.

During the same period, the number of employes in the anthracite mines of Pennsylvania was 2,951,604. The production was 1,394,656,847 tons. The number of lives lost was 10,230, or 3.47 per 1,000 employes and 7.34 per 1,000,000 tons produced. The production per life lost was 136,330 tons.

If the fatal accidents in the anthracite mines of Pennsylvania had averaged the same as in the United States, the number would have been 11,452 instead of 10,230, an increase of 1,222 accidents. If the fatal accidents in the United States had averaged the same as in Pennsylvania, the number would have been 19,271 instead of 21,567, a decrease of 2,296.

Comparative Table of Accidents, 1899-1916, Inclusive

Years.	United States						Pennsylvania					
	Production	Employes	Fatal accidents	Lives lost per 1,000 employes	Lives lost per 1,000,000 tons produced	Production per life lost	Production	Employes	Fatal accidents	Lives lost per 1,000 employes	Lives lost per 1,000,000 tons produced	Production per life lost
1899,	120,155,918	178,526	497	2.78	4.14	214,763	60,518,331	146,604	461	3.28	7.62	131,276
1900,	133,002,269	195,922	816	4.16	6.13	162,993	57,363,396	143,824	411	2.86	7.16	139,570
1901,	145,290,915	220,392	735	3.33	5.06	197,675	67,094,665	147,651	513	3.47	7.65	130,789
1902,	161,720,382	234,447	1,139	4.86	7.04	141,985	41,340,935	148,139	300	2.03	7.26	137,803
1903,	178,409,849	262,688	832	3.17	4.67	214,435	178,409,849	262,688	832	3.17	4.67	214,435
1904,	178,621,862	276,616	873	3.16	4.89	204,607	73,594,369	161,330	595	2.69	8.08	123,688
1905,	194,714,101	292,840	1,109	3.79	5.70	175,576	78,647,020	168,254	644	3.83	8.19	122,123
1906,	212,484,779	301,677	1,082	3.59	5.09	196,381	72,139,510	166,175	557	3.35	7.72	129,514
1908,	244,747,965	328,597	1,683	5.12	6.88	145,424	86,056,412	168,774	708	4.20	8.23	121,549
1907,	217,362,080	334,095	1,199	3.59	5.52	181,286	83,543,243	174,503	678	3.88	8.12	123,220
1909,	244,385,088	309,439	1,595	5.15	6.53	153,219	80,223,833	171,195	567	3.31	7.07	141,488
1910,	269,141,526	363,367	1,700	4.68	6.32	158,319	83,683,994	168,175	601	3.57	7.18	139,241
1911,	263,114,663	372,357	1,505	4.04	5.72	174,827	90,917,176	173,338	699	4.03	7.69	130,067
1912,	289,209,219	364,922	1,313	3.60	4.54	220,266	84,426,869	175,098	601	3.43	7.12	140,477
1913,	305,435,502	382,425	1,550	4.05	5.07	197,068	91,626,964	175,310	624	3.56	6.81	146,838
1914,	272,925,829	365,931	1,438	3.93	5.27	189,795	91,189,641	180,899	600	3.32	6.58	151,982
1915,	284,669,289	368,935	1,236	3.35	4.34	230,315	89,377,796	177,339	588	3.32	6.58	152,003
1916,	*334,162,000	*490,535	*1,265	3.16	3.79	264,160	87,680,198	159,169	565	3.55	6.44	155,186
Totals and averages,	4,049,573,236	5,553,711	21,567	3.88	5.33	187,767	1,394,656,847	2,951,604	10,230	3.47	7.34	136,330

*Estimated

FATALITIES IN AND ABOUT THE MINES, FATALITIES BY EXPLOSIONS OF GAS, NUMBER OF EMPLOYES AND NUMBER OF INSPECTORS, 1884-1916, INCLUSIVE.

The Department has never published a full list of fatalities from explosions of gas in the anthracite mines, but as this information has been published elsewhere, it was deemed advisable to print an official list.

In 1870 there were five anthracite Mine Inspectors in service; in 1885 the number was increased to 7; in 1891 to 8; in 1903 to 15; in 1906 to 20; in 1911 to 21, and in 1916 to 25, the present force.

During the years 1870-1916, 40 explosions of gas occurred in which 5 or more persons were killed. The greatest loss of life from this cause occurred in 1890 at the Jersey No. 8 mine of the Lehigh and Wilkes-Barre Coal Company, when 26 persons were killed. Other serious explosions occurred in 1886, 1891, 1892, 1908, 1913 and 1915, in which from 12 to 19 lives were lost. In 33 other explosions from 1870 to 1916, in which 5 or more persons were killed, as shown by the first table herewith, there were 209 lives lost.

The total number of fatalities from gas explosions from 1870 to 1916 was 1,500 or 8.93 per cent. of all inside fatalities during the past forty-seven years, as shown by Table G printed elsewhere in this report. Deducting 318, the number of fatalities from 1870 to 1916, in which 5 or more persons were killed, leaves 1,182 fatalities from explosions in which from 1 to 4 persons were killed.

In 1884 the six inspectors in service, as shown on the second table, had each an average of 16,845 employes under their jurisdiction. In 1916 the number of inspectors had been increased to 25, while the average number of employes for each inspector had decreased to 6,367. It will be noted that the number of inspectors has increased in much greater proportion than the number of employes.

From 1884 to 1902, inclusive, the average number of employes under the jurisdiction of each inspector was 17,005, while the average number for the years 1903-1916, inclusive, was 8,779, a decrease of about fifty per cent. The great increase in the number of inspectors has not brought the result desired, namely, a decrease in the number of fatalities in and about the mines.

The inspectors of Great Britain have three or four times as many employes under their jurisdiction as have the anthracite inspectors of Pennsylvania.

TABLE 1a.—Exposions of Gas in Which Five or More Persons Were Killed, 1870-1916, Inclusive.

Year	Date	Companies	Mines	Number of fatalities
1871,	Oct. 2,	Manhattan Coal Co.,	Otto Red Ash,	5
1873,	June 10,	Bells Heirs—Philadelphia and Reading Coal and Iron Co.,	Henry Clay,	10
1877,	May 9,	Philadelphia and Reading Coal and Iron Co.,	Wadesville,	7
1878,	Jan. 15,	Philadelphia and Reading Coal and Iron Co.,	Potts,	5
1879,	May 6,	Lehigh and Wilkes-Barre Coal Co.,	Audenried,	6
1879,	Nov. 2,	Delaware and Hudson Canal Co.,	Mill Creek,	5
1880,	May 3,	Summit Branch Coal Co.,	Lykens Valley,	5
1882,	May 24,	R. Hecksher and Co.,	Kohinoor,	5
1885,	Oct. 21,	Delaware and Hudson Canal Co.,	Plymouth No. 2,	6
1886,	Aug. 30,	Fair Lawn Coal Co., Limited,	Fair Lawn,	6
1886,	Nov. 26,	Delaware and Hudson Canal Co.,	Conyngham,	12
1890,	Feb. 1,	Lehigh and Wilkes-Barre Coal Co.,	Nottingham,	8
1890,	Mar. 3,	Lehigh and Wilkes-Barre Coal Co.,	Shaft No. 3,	8
1890,	April 2,	Susquehanna Coal Co.,	Susquehanna No. 4,	5
1890,	May 15,	Lehigh and Wilkes-Barre Coal Co.,	Jersey No. 8,	26
1891,	Nov. 8,	Susquehanna Coal Co.,	Susquehanna No. 1,	12
1892,	July 23,	Lehigh Valley Coal Co.,	York Farm,	15
1893,	June 22,	Susquehanna Coal Co.,	Susquehanna No. 1,	5
1893,	Sept. 21,	Lehigh and Wilkes-Barre Coal Co.,	Lance No. 11,	6
1895,	Feb. 18,	Philadelphia and Reading Coal and Iron Co.,	West Bear Ridge,	5
1895,	Oct. 7,	Lehigh Valley Coal Co.,	Dorrance,	7
1896,	Oct. 29,	Lehigh and Wilkes-Barre Coal Co.,	Shaft No. 3,	6
1900,	Nov. 9,	Coxe Bros. and Co., Inc.,	Buck Mountain,	7
1901,	Oct. 25,	Parrish Coal Co.,	Buttonwood,	6
1902,	Nov. 29,	Mineral Railroad and Mining Co.,	Luke Fidler,	7
1906,	Aug. 6,	Susquehanna Coal Co.,	Susquehanna No. 7,	6
1907,	Mar. 2,	Delaware, Lackawanna and Western Railroad Co.,	Holden,	7
1907,	June 18,	Scranton Coal Co.,	Johnson No. 1,	7
1908,	May 12,	Temple Iron Co.,	Mt. Lookout,	12
1909,	Mar. 2,	Pennsylvania Coal Co.,	Number 14,	8
1910,	Jan. 11,	Lehigh and Wilkes-Barre Coal Co.,	Nottingham,	7
1910,	Mar. 12,	Lehigh and Wilkes-Barre Coal Co.,	South Wilkes-Barre No. 5,	7
1911,	May 27,	Mineral Railroad and Mining Co.,	Cameron,	5
1912,	Jan. 9,	Parrish Coal Co.;	Parrish,	6
1913,	Aug. 2,	Philadelphia and Reading Coal and Iron Co.,	East Brookside,	19
1914,	Sept. 16,	Lehigh Coal and Navigation Co.,	Lehigh No. 4,	7
1915,	Feb. 17,	Lehigh Valley Coal Co.,	Prospect,	13
1916,	Feb. 8,	Lehigh and Wilkes-Barre Coal Co.,	Lance No. 11,	7
1916,	Mar. 9,	Lehigh and Wilkes-Barre Coal Co.,	Hollenback No. 2,	6
1916,	Aug. 8,	Delaware, Lackawanna and Western Railroad Co.,	Woodward,	6
			Total,	318

TABLE 1B.—Fatalities in and about the Mines, Number of Employes and Number of Inspectors, 1884-1916, Inclusive

Years.	Employes	Fatalities	Fatalities per 1,000 employes	Number of inspectors	Average number of employes under each inspector.
1884,	101,073	332	3.28	6	16,845
1885,	100,320	332	3.31	7	14,331
1886,	103,044	279	2.71	7	14,721
1887,	106,517	316	2.97	7	15,217
1888,	122,218	364	2.98	7	17,460
1889,	119,646	397	3.32	7	17,092
1890,	119,919	378	3.15	7	17,131
1891,	123,308	428	3.47	8	15,413
1892,	130,300	418	3.21	8	16,287
1893,	138,069	456	3.30	8	17,259
1894,	139,939	444	3.19	8	17,492
1895,	143,705	421	2.93	8	17,963
1896,	150,088	502	3.34	8	18,761
1897,	149,557	423	2.83	8	18,695
1898,	142,420	411	2.89	8	17,802
1899,	140,604	461	3.28	8	17,575
1900,	143,824	411	2.86	8	17,978
1901,	147,651	513	3.47	8	18,456
1902,	148,139	300	2.03	8	18,517
Totals and averages,	2,470,341	7,586	3.07	------	17,105
1903,	151,827	518	3.41	15	10,122
1904,	161,330	595	3.69	15	10,755
1905,	168,254	644	3.83	15	11,217
1906,	166,175	557	3.35	20	8,309
1907,	168,774	708	4.20	20	8,439
1908,	174,503	678	3.88	20	8,725
1909,	171,195	567	3.31	20	8,560
1910,	168,175	601	3.57	20	8,409
1911,	173,338	699	4.03	21	8,254
1912,	175,098	601	3.43	21	8,338
1913,	175,310	624	3.56	21	8,348
1914,	180,899	609	3.32	21	8,614
1915,	177,339	588	3.32	21	8,445
1916,	159,169	565	3.55	25	6,367
Totals and averages,	2,371,386	8,545	3.60	------	8,779

COMPANIES THAT HAD FATAL ACCIDENTS INSIDE THE MINES, 1909-1916

The companies that employed 150 or more persons inside are given separately, while the companies employing less than 150 are all included under miscellaneous. The record is given of every company employing over 150 persons for the years 1909-1914, 1914-1915 and 1916, showing the number of inside employes, the number of fatalities and the ratio per 1,000 employes. The same information is given for the group of miscellaneous companies.

Many of the companies have unenviable records showing a record of over 4 fatalities for every 1,000 employes inside for each period, 1909-1916. These records should be 50 per cent. less than they are, as the average of fatalities per 1,000 employes inside should not be more than 2 to 3 in the period of eight years as covered by the table. Several companies, however, have an average record of from 5 to 10 fatalities, and other companies show fatalities of 12 to 21 per 1,000 employes. No excuse can be given for such records.

The companies that employed over 150 persons inside in the years 1909-1914 had an average of 4.22 fatalities per 1,000 employes; for the years 1914-1915, an average of 4.04, and for 1916, an average of 4.36. The companies that employed less than 150 inside in 1909-1914 had an average of 5.27 fatalities per 1,000 employes, and in 1914-1915, an average of 4.46, and in 1916, an average of 13.72. The totals and averages of the companies that employed less than 150 persons inside, having fatal accidents, make a very bad showing. In the first period 1909-1914, the average fatalities for all companies per 1,000 employes was 4.27. In 1914-1915 it was 4.06, but in 1916 there were 4.47 per 1,000 employes, an increase of 5 per cent. over the period of 1909-1914.

It is difficult to know why the fatalities among inside employes should be any higher in 1916 than in 1914-1915. The increase may in part be due to explosions at the Hollenback No. 2 Colliery, by which 6 persons lost their lives, Lance No. 11 Colliery, by which 7 persons lost their lives, both collieries being operated by the Lehigh and Wilkes-Barre Coal Company, and the explosion at the Woodward Colliery of the Delaware, Lackawanna and Western Railroad Company, by which 6 persons lost their lives. After deducting the fatalities due to these catastrophes, there is still an average of 4.30 per 1,000 employes. There are notable exceptions to the companies that had a high rate of fatalities, as several of the companies show a material reduction. It is suggested that the companies examine the table carefully as it may impress upon them the necessity of still greater efforts to reduce fatalities.

Better education and greater discipline in the mines would no doubt lessen the number of fatalities, and the laws and rules regulating the operation of the mines should be vigorously enforced and all violators of their provisions should be severely punished.

Companies That Had Fatal Accidents Inside the Mines, 1909-1916, Inclusive

Companies	1909-1914			1914-1915			1916		
	Total employes inside	Fatalities inside	Fatalities per 1,000 employes	Total employes inside	Fatalities inside	Fatalities per 1,000 employes	Total employes inside	Fatalities inside	Fatalities per 1,000 employes
Philadelphia and Reading Coal and Iron Co.,	115,535	403	3.49	36,750	124	3.37	16,683	73	4.38
Delaware, Lackawanna and Western Railroad Co.,	90,799	381	4.20	34,004	124	3.65	15,713	52	3.31
Delaware and Hudson Co.,	80,256	290	3.61	29,485	128	4.35	13,497	42	3.11
Lehigh Valley Coal Co.,	71,542	304	4.25	23,011	121	5.26	10,084	52	5.16
Pennsylvania Coal Co.,	54,765	231	4.22	18,664	70	3.75	8,119	35	4.31
Susquehanna Coal Co.,	47,972	208	4.34	17,495	63	3.61	7,221	36	4.98
Lehigh and Wilkes-Barre Coal Co.,	45,052	248	5.50	17,021	73	4.29	6,538	37	5.66
Lehigh Coal and Navigation Co.,	31,646	132	4.17	11,488	49	4.26	5,495	17	3.09
Scranton Coal Co.,	25,715	125	4.86	7,576	43	5.68	3,152	17	5.39
Hillside Coal and Iron Co.,	15,668	51	3.25	5,880	19	3.23	2,336	5	2.14
Kingston Coal Co.,	15,452	73	4.74	4,573	22	4.81	1,851	8	4.32
Coxe Brothers and Co., Incorporated,	9,075	26	2.86	3,429	9	2.62	1,506	4	2.66
G. B. Markle Co.,	9,431	34	3.60	3,705	10	2.70	1,423	4	2.81
Price-Pancoast Coal Co.,	6,978	101	14.47	2,295	4	1.74	1,033	2	1.94
Pardee Brothers and Co.,	3,944	7	1.77	1,373	2	1.46	780	4	5.13
Forty Fort Coal Co.,	7,197	31	4.31	2,357	7	2.97	773	2	2.59
West End Coal Co.,	6,018	25	4.15	1,870	6	3.20	733	4	5.46
Jermyn and Co.,	4,038	23	4.66	1,433			717	2	2.79
Harleigh Brookwood Coal Co.,	1,617	14	8.66	1,343	8	5.96	660	5	7.58
Temple Coal Co.,	6,772	19	2.81	1,996	7	3.67	648	5	7.87
Alden Coal Co.,	3,160	6	1.90	1,187	4	3.37	612	6	9.80
Lytle Coal Co.,	3,444	13	3.77	1,228	3	2.44	530	4	7.55
Pine Hill Coal Co.,	2,784	13	4.67	1,026	9	8.77	522		
Lackawanna Coal Co., Limited,	4,664	21	4.50	1,143	3	2.62	518	2	3.86
Locust Mountain Coal Co.,	462			791	2	2.53	501	2	3.99
C. M. Dodson and Co.,	2,844	11	3.90	975	8	8.20	470	6	12.77
Mount Jessup Coal Co., Limited,	2,457	7	2.85	893	4	4.98	465	1	2.15
Wilkes-Barre Anthracite Coal Co.,	1,190	12	10.08	709	9	12.69	440	1	2.27
Traders Coal Co.,	1,151	5	4.34	744	2	2.68	439	1	2.28

Companies That Had Fatal Accidents Inside the Mines, 1909-1916, Inclusive—Continued

Companies	1909-1914			1914-1915			1916		
	Total employes inside	Fatalities inside	Fatalities per 1,000 employes	Total employes inside	Fatalities inside	Fatalities per 1,000 employes	Total employes inside	Fatalities inside	Fatalities per 1,000 employes
East Bear Ridge Colliery Co.,				277			439	2	4.56
Saint Clair Coal Co.,	2,708	10	3.69	753	7	9.30	413	1	2.42
Greenough Red Ash Coal Co.,	2,317	10	4.32	784	5	6.39	400	4	10.00
Buck Run Coal Co.,	2,057	7	3.40	966	3	3.11	397	2	5.04
Peoples Coal Co.,	1,408	15	10.65	653	3	4.59	387	4	10.13
Colonial Collieries Co.,	2,066	10	4.84	775	1	1.29	380	2	5.55
Connell Anthracite Mining Co.,	1,794			705	1	1.42	364	1	2.75
Mount Lookout Coal Co.,	3,756	26	6.92	1,351	3	2.22	351	1	2.85
Haddock Mining Co.,	3,636	18	4.95	1,019	4	3.93	326	2	6.13
Moosic Mountain Coal Co.,	2,222	9	4.05	729	3	4.17	305	3	9.83
Excelsior Coal Co.,	2,995	9	3.01	870	5	5.75	304	3	9.87
Shipman Koal Co.,	1,886	10	5.30	849	7	8.26	297	1	3.37
East Boston Coal Co.,	1,916	9	4.70	835	4	4.79	288	3	10.42
Maryd Coal Co.,	2,062	13	6.31	748	11	14.71	286	3	10.49
Oak Hill Coal Co.,	2,945	18	6.11	904	7	7.74	273	2	7.32
Northern Anthracite Coal Co.,	1,064	7	6.58	424			220	1	4.54
Pittston Coal Mining Co.,	799	1	1.25	489			218	2	9.17
Thomas Colliery Co.,	1,846	10	5.42	575	4	6.96	215	2	9.30
Wilkes-Barre Colliery Co.,	358	3	8.38	465	3	6.45	215	1	4.65
W. R. McTurk Coal Co.,	475	2	4.21	141			196	3	15.30
Treverton Colliery Co.,	1,214	1	.82	360			190	2	10.10
Red Ash Coal Co.,	2,052	7	3.41	659			190	4	21.05
Archbald Coal Co.,	1,198	8	7.22	600	8	13.33	161	1	6.21
Companies with accidents employing 150 or more inside employes,	715,153	3,017	4.22	250,197	1,012	4.04	109,752	479	4.36
Companies with accidents employing less than 150 inside employes,	35,237	186	5.27	10,997	49	4.46	1,312	18	13.72
Total of all Companies with accidents,	750,390	3,203	4.27	261,194	1,061	4.06	111,064	497	4.47

Table Showing Companies That Had Fatal Accidents Inside or Outside Their Mines; Causes of Accidents, Fatalities per 1,000 Employes, 1916

Companies	Production net tons	Employes inside	Causes of Fatal Accidents Inside				Total fatal accidents inside	Fatalities inside per 1,000 employes	Employes outside	Causes of Fatal Accidents Outside				Total fatal accidents outside	Grand total fatal accidents inside and outside	Grand total employes	Fatalities inside and outside per 1,000 employes
			Falls	Cars	Gas	Miscellaneous causes				Cars	Machinery	Electricity	Miscellaneous causes				
Philadelphia and Reading Coal and Iron Company,	13,112,726	16,683	31	8	6	28	73	4.38	6,994	8	1	------	1	10	83	23,677	3.50
Delaware, Lackawanna and Western Railroad Company,	10,876,113	15,713	26	8	8	10	52	3.31	3,365	4	------	------	4	8	60	19,078	3.14
Delaware and Hudson Company,	8,980,257	13,497	21	8	1	12	42	3.11	4,556	2	4	1	1	8	50	18,053	2.77
Lehigh Valley Coal Company,	8,218,896	10,084	17	6	4	25	52	5.16	3,516	3	------	------	3	6	58	13,600	4.26
Pennsylvania Coal Company,	5,978,445	8,119	15	5	4	11	35	4.31	2,445	------	------	------	1	1	36	10,564	3.40
Lehigh and Wilkes-Barre Coal Company,	5,252,019	6,538	11	5	15	6	37	5.66	2,510	1	------	------	1	2	39	9,048	4.31
Susquehanna Coal Company,	4,554,238	7,221	13	6	2	15	36	4.98	3,260	2	2	------	1	5	41	10,481	3.91
Lehigh Coal and Navigation Company,	4,520,780	5,495	8	2	------	7	17	3.09	2,413	4	3	------	2	9	26	7,908	3.29
Scranton Coal Company,	2,058,436	3,152	8	------	1	8	17	5.39	1,243	------	------	------	------	------	17	4,395	3.87
Coxe Brothers and Company, Incorporated,	1,748,447	1,506	1	1	------	2	4	2.65	672	------	------	------	2	2	6	2,178	2.75
G. B. Markle Company,	1,612,044	1,423	2	1	------	1	4	2.81	736	1	------	------	1	2	6	2,159	2.78
Hillside Coal and Iron Company,	1,551,545	2,336	5	------	------	------	5	2.14	774	------	1	------	------	1	6	3,110	1.93
Kingston Coal Company,	1,394,709	1,851	6	1	1	------	8	4.32	602	------	------	------	------	------	8	2,453	3.26
Pardee Brothers and Company, Inc.,	694,907	780	------	------	------	4	4	5.13	279	------	1	------	------	1	5	1,059	4.72
West End Coal Company,	684,383	733	2	------	------	2	4	5.46	285	1	------	------	------	1	5	1,018	4.91
Temple Coal Company,	604,692	648	3	------	------	2	5	7.87	224	------	------	------	------	------	5	872	5.73
Locust Mountain Coal Company,	549,415	591	2	------	------	------	2	3.99	295	------	1	------	2	3	5	796	6.28
Harleigh-Brookwood Coal Company,	549,052	660	2	1	------	2	5	7.58	312	------	------	------	------	------	5	972	5.14
Forty Fort Coal Company,	542,410	773	1	------	------	1	2	2.59	242	------	------	------	------	------	2	1,015	1.97
Price-Pancoast Coal Company,	541,412	1,033	1	------	------	1	2	1.94	203	------	------	------	------	------	2	1,236	1.62
Thomas Colliery Company,	505,564	215	1	1	------	------	2	9.30	252	1	------	------	------	1	3	467	6.42
Jermyn and Company,	485,382	717	1	------	------	1	2	2.79	158	------	------	------	------	------	2	875	2.29
St. Clair Coal Company,	412,625	413	1	------	------	------	1	2.42	287	------	------	------	------	------	1	709	1.43
Lytle Coal Company,	389,385	530	------	------	------	4	4	7.55	222	------	------	------	------	------	4	752	5.19

Table Showing Companies That Had Fatal Accidents Inside or Outside Their Mines; Causes of Accidents; Fatalities per 1,000 Employes, 1916—Continued.

Companies	Production net tons	Employes inside	Causes of Fatal Accidents Inside				Total fatal accidents inside	Fatalities inside per 1,000 employes	Employes outside	Causes of Fatal Accidents Outside				Total fatal accidents outside	Grand total fatal accidents inside and outside	Grand total employes	Fatalities inside and outside per 1,000 employes
			Falls	Cars	Gas	Miscellaneous causes				Cars	Machinery	Electricity	Miscellaneous causes				
C. M. Dodson and Company,	360,594	470	5	1			6	12.77	289	1				1	7	759	9.22
Alden Coal Company,	358,797	612	1		1	4	6	9.80	189						6	801	7.49
Lackawanna Coal Company, Limited,	350,862	518		1		1	2	3.86	155						2	673	2.97
Connell Anthracite Mining Company,	335,437	364	1				1	2.75	141						1	505	1.98
Pine Hill Coal Company,	333,784	522							233				1	1	1	755	1.32
Maryd Coal Company,	319,667	286	2			1	3	10.49	156	1				1	4	442	9.05
Buck Run Coal Company,	305,458	397	1			1	2	5.04	154						2	531	3.77
Colonial Collieries Company,	303,220	380		1		1	2	5.55	220						2	600	3.33
Mount Lookout Coal Company,	264,588	351				1	1	2.85	124						1	475	2.10
Traders Coal Company,	263,909	439	1				1	2.28	70						1	509	1.96
Wilkes-Barre Anthracite Coal Company,	263,778	440		1			1	2.27	74						1	514	1.94
Oak Hill Coal Company,	267,555	273	1			1	2	7.32	149						2	422	4.74
Greenough Red Ash Coal Company,	253,368	400	4				4	10.00	182						4	582	6.87
Mount Jessup Coal Company, Limited,	243,089	465	1				1	2.15	254						1	719	1.39
Haddock Mining Company,	217,532	326	2				2	6.13	114						2	440	4.55
Peoples Coal Company,	217,426	387	1	2		1	4	10.34	103						4	487	8.21
East Bear Ridge Colliery Company,	216,391	439	2				2	4.56	150						2	589	3.40
Red Ash Coal Company,	197,369	199	2			2	4	21.05	137						4	327	12.17
Moosic Mountain Coal Company,	195,539	305	2	1			3	9.83	47						3	352	8.52
Northern Anthracite Coal Company,	192,675	220	1				1	4.54	86						1	306	3.27
Mill Creek Coal Company,	191,262	145	1				1	6.89	137				1	1	2	282	7.09
Excelsior Coal Company,	189,179	304	2			1	3	9.87	111						3	415	7.23
Shipman Koal Company,	178,205	297				1	1	3.37	155						1	452	2.21
Girard Mammoth Coal Company,	167,148	68	1				1	14.70	216						1	284	3.52
East Boston Coal Company,	160,748	288	2	1			3	10.42	153						3	441	6.80
Archbald Coal Company,	152,895	161	1				1	6.21	75						1	236	4.24

Wilkes-Barre Colliery Company,	149,294	215				1	1	4.65	49						1	264	3.79
Treverton Colliery Company,	136,809	190	2				2	10.10	75						2	265	7.54
Pittston Coal Mining Company,	136,041	218	1	1			2	9.17	60						2	278	7.19
Darkwater Coal Company,	132,982	147		2		2	4	27.21	89						4	236	16.95
Mount Hope Coal Company,	128,144	60							88				1	1	1	148	6.76
John Conlon Coal Company,	96,261	100				1	1	10.00	14						1	114	8.77
West Nanticoke Coal Company,	88,791	128				1	1	7.81	32						1	160	6.25
E. S. Stackhouse Coal Company,	77,778	109				1	1	9.17	52						1	161	6.21
W. R. McTurk Coal Company,	73,818	196				3	3	15.30	115		1			1	4	311	12.86
Scranton Anthracite Coal Company,	60,210	65	1				1	15.38	27						1	92	10.87
Bulls Head Coal Company,	48,851	130	1				1	7.69	35						1	165	6.07
Clearview Coal Company,	43,253	120	1				1	8.33	18						1	138	7.24
Port Carbon Coal Company,	42,713	47		2			2	42.55	25						2	72	27.78
Rockett Brook Coal Company,	42,692	132				2	2	15.15	51						2	183	10.93
Central Coal Company,	37,147	112		1			1	8.93	20						1	132	7.57
Gorman and Campion,	19,154	32							24		1			1	1	56	17.86
Tip Top Coal Company,	14,861	9				1	1	111.11	18						1	27	37.04
Carbon Creek Coal Company,	8,535								25				1	1	1	25	40.00

Table Showing Number of Employes Inside Between 16 and 21 Years, and Number of Employes Outside Between 14 and 21 Years, 1916

Districts	Inside Employes			Outside Employes			Grand total
	Between 16 and 21 years	Over 21 years	Total	Between 14 and 21 years	Over 21 years	Total	
First,	365	3,933	4,298	386	1,338	1,724	6,022
Second,	414	5,052	5,466	532	1,301	1,833	7,299
Third,	372	4,474	4,846	209	1,205	1,414	6,260
Fourth,	251	3,786	4,037	215	873	1,088	5,125
Fifth,	265	4,910	5,175	310	1,076	1,386	6,561
Sixth,	388	4,930	5,318	392	1,155	1,547	6,865
Seventh,	234	4,234	4,468	414	825	1,239	5,707
Eighth,	416	6,069	6,485	52	1,830	1,882	8,367
Ninth,	373	4,167	4,540	171	1,247	1,418	5,958
Tenth,	254	4,282	4,536	303	1,198	1,501	6,037
Eleventh,	362	4,244	4,606	189	1,167	1,356	5,962
Twelfth,	620	5,103	5,723	339	1,265	1,604	7,327
Thirteenth,	334	4,669	5,003	302	1,169	1,471	6,474
Fourteenth,	467	5,077	5,544	486	1,574	2,060	7,604
Fifteenth,	206	4,264	4,470	422	1,866	2,288	6,758
Sixteenth,	216	3,366	3,582	425	1,679	2,104	5,686
Seventeenth	209	4,154	4,363	438	1,421	1,859	6,222
Eighteenth,	168	3,680	3,848	471	1,380	1,851	5,699
Nineteenth,	220	3,228	3,448	448	1,228	1,676	5,124
Twentieth,	461	3,962	4,423	538	1,224	1,762	6,185
Twenty-first,	297	4,221	4,518	751	1,807	2,558	7,076
Twenty-second,	452	4,889	5,341	695	1,628	2,323	7,664
Twenty-third,	283	4,071	4,354	503	1,332	1,835	6,189
Twenty-fourth,	336	3,679	4,015	489	1,292	1,781	5,796
Twenty-fifth,	330	3,355	3,685	397	1,120	1,517	5,202
Totals,	8,293	107,799	116,092	9,877	33,200	43,077	159,169

Nationality of Inside Employes by Districts, 1916

Nationalities Inside	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	Ninth	Tenth	Eleventh	Twelfth	Thirteenth
American,	649	1,889	1,454	882	1,284	1,176	866	1,311	727	1,227	892	1,249	974
English,	132	373	173	185	82	239	168	86	119	147	107	190	142
Welsh,	114	103	207	201	364	233	201	62	150	106	415	380	324
Scotch,	19	34	31	19	3	19	21	70	15	25	6	8	3
Irish,	107	150	226	325	331	204	191	272	184	132	152	219	191
German,	56	50	102	100	62	102	41	85	59	88	49	110	74
Slavonian,	359	67	92	269	257	386	168	256	478	221	147	421	203
Italian,	758	574	89	484	354	464	753	1,473	627	622	87	48	125
Polish,	569	1,147	561	464	1,642	1,279	1,193	1,188	1,042	974	988	1,740	1,513
Hungarian,	182	113	71	169	10	86	45	59	33	58	49	44	106
Austrian,	648	322	376	184	119	380	175	364	207	228	394	192	199
Swedish,	1	1		40	1	1	3		3	3	14		13
Russian,	330	511	429	267	587	476	452	391	276	382	553	320	390
Belgian,			5										
Bohemian,						3	5	2	6	2		4	
French,	15			5	2	1	28			1			
Canadian,		3		6		1	2						
Lithuanian,	304	119	905	562	40	264	147	863	677	243	750	798	760
Greek,	26	4		21	1	5	9	1	1	9	2	7	4
Tyrolean,	4												
Danish,	4	1								1	1		
Croatian,			4							9			
Syrian,													
Montenegrin,													
Norwat,										152		3	
Spanish,								2					
Hebrew,													
Totals inside,	4,277	5,461	4,725	4,183	5,139	5,319	4,468	6,485	4,584	4,630	4,606	5,733	5,021

Nationality of Inside Employes by Districts, 1916—Continued

Nationalities Inside	Fourteenth	Fifteenth	Sixteenth	Seventeenth	Eighteenth	Nineteenth	Twentieth	Twenty-first	Twenty-second	Twenty-third	Twenty-fourth	Twenty-fifth	Totals inside
American,	1,161	1,116	1,066	1,544	1,134	1,121	1,218	1,080	2,604	1,488	1,839	2,944	32,895
English,	136	59	33	60	53	26	94	37	95	31	51	38	2,847
Welsh,	166	30	18	47	37	40	54	46	59	41	33	29	3,460
Scotch,	2	3		9	8	2	8		52	4	8	1	350
Irish,	46	527	37	52	50	80	88	107	123	55	55	61	3,765
German,	205	92	51	25	47	49	72	14	148	48	90	43	1,842
Slavonian,	187	942	826	1,203	272	323	133	4	47	110	111	83	7,565
Italian,	340	620	113	179	115	225	102	151	218	264	178	32	8,995
Polish,	2,329	599	924	45	423	352	799	1,048	552	918	713	33	23,026
Hungarian,	42	127	105	49	47	195	24	66	42	166	121	22	2,031
Austrian,	292	164	257	175	311	355	69	169	449	364	226	146	6,765
Swedish,	1								1		1		83
Russian,	216	72	219	127	177	381	169	283	329	474	423	108	8,342
Belgian,					1	2					1		9
Bohemian,								1	1		9		33
French,			3		1	1	5			5	1	1	69
Canadian,		2											14
Lithuanian,	368	259	191	195	866	550	1,438	1,029	779	246	79	66	12,498
Greek,		46	12	142	130	147	68	87	178	2			902
Tyrolean,			144	13	13	62	3	2	16		5	22	284
Danish,	3			10									20
Croatian,				20			1						34
Syrian,		4					15	12	4		1		36
Montenegrin,		16	6										22
Horwat,		107		46						106			414
Spanish,													2
Hebrew,													
Totals inside,	5,494	4,567	4,005	3,941	3,685	3,911	4,360	4,136	5,677	4,322	3,945	3,629	116,303

Nationality of Outside Employes, by Districts, 1916

Nationalities Outside	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	Ninth	Tenth	Eleventh	Twelfth	Thirteenth
American,	850	1,034	846	653	769	772	632	817	601	690	854	1,042	815
English,	45	46	20	31	30	51	44	55	32	31	26	61	37
Welsh,	22	9	19	24	37	23	15	22	46	26	26	55	39
Scotch,	3	11	8	3	4	11	27	21	5	3	3	6	10
Irish,	44	38	82	82	104	89	59	43	51	37	31	47	78
German,	29	24	10	28	27	22	17	20	28	26	31	15	35
Slavonian,	97	48	38	14	34	62	21	61	138	61	43	112	87
Italian,	142	221	195	82	100	184	149	480	93	34	33	16	31
Polish,	127	187	33	34	99	102	68	44	137	130	38	83	86
Hungarian,	28	53	2	27	9	99	8	40	22	9	13	10	15
Austrian,	89	36	52	102	82	81	102	169	94	118	133	76	45
Swedish,		4		1		2			10	2		1	1
Russian,	137	119	89	25	55	33	81	42	111	104	84	54	144
Belgian,													
Bohemian,						1	1						
French,		2					12	1					
Canadian,							3		3	1			
Lithuanian,	74	4	8	24	3	15		34	27	28	12	25	27
Greek,	1			33						2		2	4
Tyrolean,													
Danish,	2												
Croatian,													
Japanese,													
Syrian,											11		
Montenegrin,													
Horwat,										12			
Spanish,													
Hebrew,			1										
Totals outside,	1,699	1,836	1,394	1,163	1,353	1,547	1,239	1,849	1,398	1,314	1,338	1,605	1,454
Grand totals inside and outside,	5,967	7,297	6,119	5,346	6,492	6,866	5,707	8,234	5,982	5,944	5,944	7,338	6,475

Nationality of Outside Employes by Districts, 1916—Continued

Nationalities Outside	Fourteenth	Fifteenth	Sixteenth	Seventeenth	Eighteenth	Nineteenth	Twentieth	Twenty-first	Twenty-second	Twenty-third	Twenty-fourth	Twenty-fifth	Total outside
American,	1,192	945	1,356	940	1,120	952	1,212	1,593	2,064	1,203	1,292	1,307	25,551
English,	68	14	21	9	16	11	22	38	34	8	47	9	806
Welsh,	32	17	4	2	8	9	7	31	11	13	9	5	511
Scotch,			2		3	5		6		1	4	1	137
Irish,	37	61	27	15	22	59	24	87	69	13	32	3	1,234
German,	91	74	59	11	20	35	39	38	68	27	64	6	844
Slavonian,	53	390	256	434	99	106	83	54	32	30	19	26	2,398
Italian,	70	281	201	142	78	53	29	265	72	27	13	32	3,023
Polish,	260	322	91	87	73	94	133	104	52	163	134	21	2,702
Hungarian,	3	118	114	9	31	113	2	32	15	71	35	36	914
Austrian,	163	22	74	64	143	141	147	149	169	144	29	17	2,441
Swedish,		1		4	4				3		1		34
Russian,	49	23	41	68	30	96	42	45	47	92	40	51	1,693
Belgian,													
Bohemian,									1	1	10		14
French,	1	1				1	5	1		12	1	2	39
Finnish,													
Canadian,													7
Lithuanian,	16	29	13	30	14	67	66	55	33		38		642
Greek,		48	2		52	49	14	106	11	18	1		343
Tyrolean,		17	9		1	7						3	37
Danish,	7												9
Croatian,				62									62
Japanese,													
Syrian,				2			13						26
Montenegrin,		7											7
Horwat,										7			19
Spanish,													
Hebrew,													1
Totals outside,	2,042	2,370	2,270	1,879	1,714	1,798	1,838	2,604	2,681	1,830	1,769	1,519	43,494
Grand totals inside and outside,	7,536	6,937	6,275	5,820	5,399	5,709	6,198	6,740	8,358	6,152	5,714	5,148	159,797

TABLE 1.—Number of minor children killed inside and outside the mines, 1916

Districts	Inside								Outside													
	Boys 16 years	Boys 17 years	Boys 18 years	Boys 19 years	Boys 20 years	Total inside	Total number of minors inside	Lives lost per 1,000 minors employed inside	Boys 14 years	Boys 15 years	Boys 16 years	Boys 17 years	Boys 18 years	Boys 19 years	Boys 20 years	Total outside	Grand total inside and outside	Total number of minors outside	Grand total number of minors inside and outside	Lives lost per 1,000 minors employed outside	Lives lost per 1,000 minors employed inside and outside
First,	1					1	365	2.74									1	386	751		1.33
Second,					1	1	414	2.42				1	1			2	3	532	946	3.76	3.17
Third,							372											209	581		
Fourth,							251											215	466		
Fifth,							265											310	575		
Sixth,				1		1	388	2.58			1					1	2	392	780	2.55	2.56
Seventh,			1	1		2	234	8.55									2	414	648		3.09
Eighth,			2			2	416	4.81									2	52	468		4.27
Ninth,	1				1	2	373	5.36					1			1	3	171	544	5.85	5.51
Tenth,			2			2	254	7.87									2	303	557		3.59
Eleventh,				2		2	362	5.52									2	189	551		3.63
Twelfth,	1		1	1	1	4	620	6.45									4	339	959		4.17
Thirteenth,							334											302	636		
Fourteenth,		1	1	2		4	467	8.57									4	486	953		4.20
Fifteenth,							206											422	628		
Sixteenth,		1			1	2	216	9.26		1						1	3	425	641	2.35	4.68
Seventeenth,			1	1		2	209	9.57					1			1	3	438	647	2.28	4.64
Eighteenth,			1			1	168	5.95		1						1	2	471	639	2.12	3.13
Nineteenth,			1	1		2	220	9.09					1			1	3	448	668	2.23	4.49
Twentieth,							461											538	999		
Twenty-first,				2		2	297	6.73			1		1		1	3	5	751	1,048	3.99	4.77
Twenty-second,			1			1	452	2.21			1					1	2	695	1,147	1.43	1.74
Twenty-third,			2	1		3	283	10.60					1			1	4	503	786	1.99	5.09
Twenty-fourth,			1	1		2	336	5.95									2	489	825		2.42
Twenty-fifth,				1	1	2	330	6.06									2	397	727		2.75
Totals,	3	2	14	14	5	38	8,293	4.58		2	3	1	6		1	13	51	9,877	18,170	1.32	2.81

TABLE 2—Fatal Accidents Inside the Mines, Production, Employes, Fatalities per 1,000 Employed, Production per Fatality, Fatalities per 1,000,000 Tons Produced, by Counties, 1916.

Counties	Fatal Accidents Inside				Totals	Production in tons of 2,000 pounds	Employes inside	Lives lost inside per 1,000 employes	Production per life lost inside	Lives lost inside per 1,000,000 tons produced
	By falls	By cars	By explosions of gas	By miscellaneous causes						
Luzerne,	88	29	32	67	216	32,497,845	43,280	4.99	150,453	6.65
Schuylkill,	43	15	2	49	109	21,109,730	23,784	4.58	193,667	5.16
Lackawanna,	54	13	2	33	102	20,983,978	31,104	3.28	205,725	4.86
Northumberland,	24	7	6	15	52	6,299,185	9,940	5.23	121,138	8.26
Totals and averages,	209	64	42	164	479	80,890,738	108,108	4.43	168,874	5.92
Carbon,	3	1	----	3	7	2,966,975	3,409	2.05	423,854	2.36
Columbia,	1	----	----	----	1	1,346,874	1,354	.73	1,346,874	.74
Dauphin,	----	2	1	2	5	986,234	1,376	3.63	197,247	5.07
Susquehanna,	3	----	----	----	3	791,326	1,118	2.68	263,775	3.79
Sullivan,	2	----	----	----	2	553,308	682	2.93	276,654	3.61
Wayne,	----	----	----	----	----	144,743	45	------	----------	------
Totals and averages,	9	3	1	5	18	6,789,460	7,984	2.25	377,192	2.65
Grand totals and averages,	218	67	43	169	497	87,680,198	116,092	4.28	176,419	5.67

TABLE 3.—Nationality by birth of employes killed by falls, 1916

Nationalities	Districts																									Percentages.	Totals
	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	Ninth	Tenth	Eleventh	Twelfth	Thirteenth	Fourteenth	Fifteenth	Sixteenth	Seventeenth	Eighteenth	Nineteenth	Twentieth	Twenty-first	Twenty-second	Twenty-third	Twenty-fourth	Twenty-fifth		
American,		1	2		1			1	1	1		3	1	2		2	2			2	1	4	3	5	3	35	16.05
English,						1	1	1			1	1	1								1					7	3.21
Welsh,														1			1									2	.92
Scotch,								1																		1	.46
Irish,			1		1				1			1														4	1.83
German,				1																						1	.46
Polish,	2	4	1	2	2	5	2		2	2	4	5	4	7		2	1	1		1	1	3	3	2		56	25.69
Hungarian,																1										1	.46
Italian,	1	1	1	3			1	5	1	1	1		1							1		1				18	8.26
Slavonian,	1								1	1		2			2	1	1	3		1						13	5.96
Lithuanian,	2		4	1			2	1		2	1	2	1	1		1		4		6	2				1	31	14.22
Austrian,	2		1	2			3	1		1	1				1			2	1			1	3			19	8.72
Russian,	1	1		1		4	1	3	2	1		4	1		1	1		1	1			1	4			28	12.84
Greek,																						2				2	.92
Totals,	9	7	10	10	4	10	10	13	8	9	8	18	9	11	4	8	5	11	2	11	5	12	13	7	4	218	100.00

TABLE 4.—Nationality by birth of employes killed by falls, 1916

Districts	Non-English Speaking Employes								Totals	English Speaking Employes *							Totals	Grand totals
	By falls at or near face	By falls while taking out pillars	By falls on gangway while timbering and repairing	By falls on gangway while riding on cars	By falls in old workings	By falls near mouth of tunnel	By falls near foot of slope	By falls while repairing shaft		By falls at or near face	By falls while taking out pillars	By falls on gangway while timbering and repairing	By falls on gangway while riding on cars	By falls on slope	By falls on plane	By falls in tunnel		
First,	6	2					1		9									9
Second,	6								6	1							1	7
Third,	5		1					1	7	1		1	1				3	10
Fourth,	8	1							9	1							1	10
Fifth,	2								2	2							2	4
Sixth,	8	1							9			1					1	10
Seventh,	8	1							9	1							1	10
Eighth,	8	2							10	3							3	13
Ninth,	5		1						6	1					1		2	8
Tenth,	7	1							8		1						1	9
Eleventh,	6			1					7							1	1	8
Twelfth,	13								13	4			1				5	18
Thirteenth,	6		1						7	2							2	9
Fourteenth,	7		1						8	1		2					3	11
Fifteenth,	2	2							4									4
Sixteenth,	4	2							6		1			1			2	8
Seventeenth,	1		1						2	3							3	5
Eighteenth,	9	2							11									11
Nineteenth,	2								2									2
Twentieth,	9								9	1		1					2	11
Twenty-first,	3								3	2							2	5
Twenty-second,		4	3	1					8	2	1	1					4	12
Twenty-third,	9				1				10	2		1					3	13
Twenty-fourth,	2								2	4		1					5	7
Twenty-fifth,						1			1	2		1					3	4
Totals,	136	18	8	2	1	1	1	1	168	33	3	9	2	1	1	1	50	218

*English speaking employes including Americans, English, Scotch, Irish, Welsh and Germans.

TABLE 5.—Fatal accidents, production, employes, fatalities inside per 1,000 employes, fatalities inside per 1,000,000 tons produced, by districts, 1916

Districts	Employes inside	Production	Falls	Cars	Gas	Explosives	Blasts	Electricity	Falling into shafts, slopes, etc.	Machinery	Miscellaneous causes	Total fatal accidents inside	Fatalities inside per 1,000 employes	Fatalities inside per 1,000,000 tons produced	Employes outside	Fatal accidents outside	Total fatal accidents	Total employes	Fatalities inside and outside per 1,000 employes
First,	4,298	3,267,479	9	3	------	------	3	------	------	------	------	15	3.49	4.59	1,724	------	15	6,022	2.49
Second,	5,466	3,370,164	7	------	------	4	3	------	------	------	1	15	2.74	4.45	1,833	3	18	7,299	2.47
Third,	4,846	3,304,705	10	3	------	------	4	------	------	------	------	17	3.51	5.14	1,414	------	17	6,260	2.72
Fourth,	4,037	2,888,107	10	2	1	2	4	------	------	------	2	21	5.20	7.27	1,088	1	22	5,125	4.29
Fifth,	5,175	3,408,294	4	------	1	------	2	------	------	------	------	7	1.35	2.05	1,386	2	9	6,561	1.37
Sixth,	5,318	3,693,220	10	2	------	------	2	2	------	------	3	19	3.57	5.14	1,547	2	21	6,865	3.06
Seventh,	4,468	3,140,855	10	4	------	------	1	------	------	------	------	15	3.36	4.78	1,239	2	17	5,707	2.98
Eighth,	6,485	4,207,421	13	3	4	------	6	------	------	------	2	28	4.32	6.65	1,882	1	29	8,367	3.47
Ninth,	4,540	3,253,483	8	1	1	2	8	1	------	------	1	22	4.85	6.76	1,418	1	23	5,958	3.84
Tenth	4,536	2,800,291	9	3	1	------	4	2	------	------	2	21	4.63	7.50	1,501	4	25	6,037	4.15
Eleventh,	4,606	3,623,238	8	4	8	------	8	------	------	------	2	30	6.51	8.28	1,356	------	30	5,962	5.03
Twelfth,	5,723	4,185,065	18	6	15	------	2	------	------	------	1	42	7.34	10.04	1,604	2	44	7,327	6.01
Thirteenth,	5,003	3,912,117	9	5	2	1	1	------	1	------	1	20	4.00	5.13	1,471	2	22	6,474	3.40
Fourteenth,	5,544	3,895,828	11	2	1	------	4	1	1	------	8	28	5.05	7.19	2,060	4	32	7,604	4.21
Fifteenth,	4,470	4,576,351	4	2	------	1	------	------	1	------	6	14	3.13	3.06	2,288	5	19	6,758	2.81
Sixteenth,	3,582	3,416,809	8	3	------	------	------	------	------	------	2	13	3.63	3.80	2,104	6	19	5,686	3.34
Seventeenth,	4,363	3,896,570	5	1	------	------	1	2	1	------	3	13	2.98	3.34	1,859	6	19	6,222	3.05
Eighteenth,	3,848	3,769,536	11	2	1	------	------	------	------	------	4	18	4.68	4.78	1,851	5	23	5,699	4.04
Nineteenth,	3,448	3,035,814	2	2	------	------	------	1	1	------	8	14	4.06	4.61	1,676	2	16	5,124	3.12
Twentieth,	4,423	3,443,162	11	1	------	3	2	------	2	------	2	21	4.75	6.10	1,762	5	26	6,185	4.20
Twenty-first,	4,518	4,390,070	5	6	------	------	1	------	------	------	5	17	3.76	3.80	2,558	6	23	7,076	3.25
Twenty-second,	5,341	4,054,448	12	3	2	------	4	------	1	------	4	26	4.87	6.41	2,323	6	32	7,664	4.18
Twenty-third,	4,351	2,612,241	13	3	2	------	2	------	3	------	3	26	5.97	9.95	1,835	2	28	6,189	4.52
Twenty-fourth,	4,015	2,649,819	7	3	2	------	1	------	1	------	4	18	4.48	6.79	1,781	1	19	5,796	3.28
Twenty-fifth,	3,685	2,885,201	4	3	2	------	3	------	------	------	5	17	4.61	5.89	1,517	------	17	5,202	3.27
Totals and averages,	116,092	87,680,198	218	67	43	13	66	9	12	------	69	497	4.28	5.67	43,077	68	565	159,169	3.55

TABLE 6.—Fatal accidents, production, employes, fatalities per 1,000 employes, fatalities per 1,000,000 tons produced, by years 1899-1916 Inclusive

Years.	Employes inside	Production net tons	Falls	Cars	Gas	Explosives	Blasts	Electricity	Falling into shafts, slopes, etc.	Machinery	Miscellaneous causes	Total fatal accidents inside	Fatalities inside per 1,000 employes	Fatalities inside per 1,000,000 tons produced	Employes outside	Fatal accidents outside	Total fatal accidents	Total employes	Fatalities inside and outside per 1,000 employes
1899,	92,167	60,518,331	226	51	28	11	27	------	16	------	30	389	4.22	6.43	48,437	72	461	140,604	3.28
1900,	94,140	57,363,396	175	60	38	14	29	------	19	------	23	358	3.80	6.24	49,684	53	411	143,824	2.86
1901,	98,434	67,094,665	226	69	33	15	36	------	24	------	38	441	4.48	6.57	49,217	72	513	147,651	3.47
1902,	98,377	41,340,935	116	42	20	19	13	------	13	------	22	245	2.49	5.93	49,762	55	300	148,139	2.03
1903,	102,055	75,232 585	210	70	26	17	38	1	31	------	33	426	4.17	5.66	49,772	92	518	151,827	3.41
1904,	110,362	73,594,369	238	71	30	35	34	------	26	------	62	496	4.49	6.74	50,968	99	595	161,330	3.69
1905,	116,371	78,647,020	295	82	33	16	44	2	43	------	36	551	4.73	7.01	51,883	93	644	168,254	3.83
1906,	114,998	72,139 510	214	67	43	28	53	------	20	2	29	456	3.97	6.32	51,177	101	557	166,175	3.35
1907,	117,849	86,056,412	279	88	44	17	70	3	25	2	73	601	5.10	6.98	50,925	107	708	168,774	4.20
1908,	124,233	83,543,243	284	90	57	23	69	1	22	1	49	596	4.79	7.13	50,270	82	678	174,503	3.88
1909,	123,272	80,223,833	254	71	28	22	47	6	18	1	43	490	3.98	6.11	47,923	77	567	171,195	3.31
1910,	121,542	83,683,994	253	92	20	22	60	3	19	2	38	509	4.19	6.08	46,633	92	601	168,175	3.57
1911,	126,037	90,917,176	253	92	34	21	67	2	21	4	121	615	4.88	6.76	47,301	84	699	173,338	4.03
1912,	127,807	84,426,869	246	78	35	25	51	5	18	------	40	498	3.90	5.90	47,291	103	601	175,098	3.43
1913,	128,667	91,626,964	261	86	48	11	62	1	30	2	56	557	4.33	6.08	46,643	67	624	175,310	3.56
1914,	134,073	91,189,641	231	76	43	13	76	3	47	1	44	534	3.98	5.86	46,826	66	600	180,899	3.32
1915,	131,296	89,377,706	268	81	33	8	69	4	12	1	51	527	4.01	5.90	46,043	61	588	177,339	3.32
1916,	116,092	87,680,198	218	67	43	13	66	9	12	------	69	497	4.28	5.67	43,077	68	565	159,169	3.55
Totals and averages,	2,077,772	1,394,656,847	4,247	1,333	636	330	911	40	416	16	857	8,786	4.23	6.30	873,832	1,444	10,230	2,951,604	3.47

TABLE 7.—Mines in operation, production, inside employes, fatal accidents inside, production per fatality inside, fatalities inside per 1,000,000, tons produced, by districts, 1916

Districts	Mines in operation	Production in tons of 2,000 pounds	Inside employes	Outside employes	Total number of employes	Fatalities inside	Fatalities outside	Fatalities inside per 1,000 employes	Production per fatality inside	Fatalities inside per 1,000,000 tons produced	Fatalities inside and outside per 1,000 employes
First,	27	3,267,479	4,298	1,724	6,022	15	------	3.49	217,832	4.59	2.49
Second,	29	3,370,164	5,466	1,833	7,299	15	3	2.74	224,677	4.45	2.47
Third,	22	3,304,705	4,846	1,414	6,260	17	------	3.51	194,394	5.14	2.72
Fourth,	12	2,888,107	4,037	1,088	5,125	21	1	5.20	137,529	7.27	4.29
Fifth,	27	3,408,204	5,175	1,386	6,561	7	2	1.35	486,886	2.05	1.37
Sixth,	28	3,693,220	5,318	1,547	6,865	19	2	3.57	194,380	5.14	3.06
Seventh,	24	3,140,855	4,468	1,239	5,707	15	2	3.36	209,390	4.78	2.98
Eighth,	28	4,207,421	6,485	1,882	8,367	28	1	4.32	150,265	6.65	3.47
Ninth,	25	3,253,483	4,540	1,418	5,958	22	1	4.85	147,885	6.76	3.84
Tenth,	46	2,800,291	4,536	1,501	6,037	21	4	4.63	133,347	7.50	4.15
Eleventh,	18	3,623,238	4,606	1,356	5,962	30	------	6.51	120,778	8.28	5.03
Twelfth,	20	4,185,065	5,723	1,604	7,327	42	2	7.34	99,644	10.04	6.01
Thirteenth,	48	3,912,117	5,003	1,471	6,474	20	2	4.00	195,606	5.13	3.40
Fourteenth,	40	3,895,828	5,544	2,060	7,604	28	4	5.05	139,136	7.19	4.21
Fifteenth,	59	4,576,351	4,476	2,288	6,758	14	5	3.13	327,382	3.06	2.81
Sixteenth,	57	3,416,809	3,582	2,104	5,686	13	6	3.63	262,831	3.80	3.34
Seventeenth,	23	3,896,570	4,363	1,859	6,222	13	6	2.98	299,736	3.34	3.05
Eighteenth,	33	3,769,536	3,848	1,851	5,699	18	5	4.68	209,419	4.78	4.04
Nineteenth,	36	3,035,814	3,448	1,676	5,124	14	2	4.06	217,344	4.61	3.12
Twentieth,	18	3,443,162	4,423	1,762	6,185	21	5	4.75	163,960	6.10	4.20
Twenty-first,	28	4,390,070	4,518	2,558	7,076	17	6	3.76	258,239	3.80	3.25
Twenty-second,	28	4,054,448	5,341	2,323	7,664	26	6	4.87	155,940	6.41	4.18
Twenty-third,	28	2,612,241	4,354	1,835	6,189	26	2	5.97	100,471	9.95	4.52
Twenty-fourth,	34	2,649,819	4,015	1,781	5,796	18	1	4.48	147,212	6.79	3.28
Twenty-fifth,	22	2,885,201	3,685	1,517	5,202	17	------	4.61	169,718	5.89	3.27
Totals and averages,	760	87,680,198	116,092	43,077	159,169	497	68	4.28	176,419	5.67	3.55

TABLE 8.—Fatal accidents inside the mines and production per accident, by counties, 1899-1916, inclusive

Years	Counties	Number of mines	Number of inside employes	Production in tons of 2,000 pounds	Fatal accidents by falls	Fatal accidents by explosions of gas	Total fatal accidents inside	Production in tons per fatal accident inside	Lives lost per 1,000 employes
1899	Luzerne,	156	33,078	22,287,712	98	16	144	154,776	4.35
1900		152	34,476	21,481,122	57	17	135	159,119	3.91
1901		148	36,019	23,963,869	95	22	182	131,670	5.05
1902		229	35,491	14,577,949	36	7	93	156,752	2.62
1903		233	38,370	27,878,362	75	15	169	164,961	4.40
1904		256	41,603	27,705,288	106	8	200	138,526	4.81
1905		254	43,109	29,992,636	122	14	215	139,501	4.99
1906		271	41,643	26,612,192	84	27	194	137,176	4.66
1907		243	42,022	30,853,087	105	19	223	138,355	5.31
1908		243	46,302	31,728,997	116	34	258	122,981	5.57
1909		241	45,121	30,992,306	112	16	202	153,427	4.48
1910		250	44,383	32,106,979	96	12	215	149,335	4.84
1911		281	46,863	35,061,582	92	18	205	171,032	4.37
1912		311	47,133	32,643,232	83	24	202	161,600	4.29
1913		298	47,943	36,326,287	107	10	211	172,162	4.40
1914		293	51,791	36,973,767	111	18	217	170,386	4.19
1915		308	50,950	35,266,086	103	17	215	164,028	4.21
1916		314	43,280	32,497,845	88	32	216	150,453	4.99
	Totals and averages.	4,481	769,577	528,949,298	1,686	326	3,496	151,301	4.54
1899	Lackawanna,	76	22,314	14,838,821	71	2	108	137,397	4.84
1900		83	23,907	13,755,961	55	8	89	154,561	3.72
1901		80	26,207	17,258,125	63	4	109	158,331	4.16
1902		118	25,931	11,851,169	23	--------	43	275,609	1.66
1903		114	27,755	20,046,133	59	3	107	187,347	3.86
1904		115	30,500	19,007,628	62	7	115	165,284	3.77
1905		126	30,853	19,709,164	82	2	127	155,190	4.12
1906		157	31,196	18,840,561	70	4	112	168,219	3.59
1907		155	32,444	22,433,409	87	16	174	128,928	5.36
1908		162	32,296	21,631,995	80	3	141	153,418	4.37
1909		157	33,764	20,489,212	73	1	129	158,831	3.82
1910		157	33,285	21,182,921	87	3	139	152,395	4.18
1911		151	34,069	22,598,414	78	3	218	103,662	6.40
1912		153	34,074	20,617,308	79	4	127	162,341	3.73
1913		156	34,285	21,836,671	83	4	140	155,976	4.08
1914		167	34,445	21,649,788	62	--------	130	166,537	3.77
1915		160	34,488	21,697,563	82	3	139	156,098	4.03
1916		159	31,104	20,983,978	54	2	102	205,725	3.28
	Totals and averages.	2,446	552,917	350,428,821	1,250	69	2,249	155,815	4.07
1899	Schuylkill,	83	20,474	13,694,171	43	8	90	152,157	4.40
1900		82	19,952	12,998,899	32	11	82	158,523	4.11
1901		76	20,415	15,277,658	39	6	93	164,276	4.56
1902		76	20,876	8,622,103	37	3	60	143,702	2.87
1903		76	20,144	16,389,505	44	6	88	186,244	4.37
1904		106	22,272	16,173,158	43	8	107	151,151	4.80
1905		132	25,716	17,975,160	60	11	136	132,170	5.29
1906		153	25,365	16,376,538	32	7	94	174,218	3.71
1907		140	25,181	20,160,970	48	3	123	163,910	4.88
1908		179	26,625	18,196,714	54	17	121	150,386	4.54
1909		178	25,749	16,794,597	35	7	88	190,848	3.42
1910		188	25,302	17,696,013	44	4	94	188,255	3.72
1911		185	26,015	19,234,447	53	6	118	163,004	4.54
1912		213	26,619	17,986,745	55	5	109	165,016	4.09
1913		191	26,768	19,511,483	43	29	134	145,608	5.01
1914		194	25,898	19,166,424	29	9	101	189,767	3.90
1915		215	26,111	19,078,139	50	9	109	175,029	4.17
1916		160	23,784	21,109,730	43	2	109	193,667	4.58
	Totals and averages.	2,627	433,266	306,442,454	784	151	1,856	165,109	4.28

TABLE 8.—Continued

Years	Counties	Number of mines	Number of inside employes	Production in tons of 2,000 pounds	Fatal accidents by falls	Fatal accidents by explosions of gas	Total fatal accidents inside	Production in tons per fatal accident inside	Lives lost per 1,000 employes
1899	Northumberland,	28	9,739	4,860,292	19	2	23	211,317	2.36
1900		27	9,741	4,690,944	15	1	33	142,150	3.39
1901		27	9,867	5,430,991	21	1	36	150,861	3.65
1902		28	9,670	3,162,066	10	10	34	93,002	3.52
1903		26	9,312	5,518,580	21	2	35	157,674	3.76
1904		52	9,248	5,516,647	15	6	39	141,452	4.22
1905		54	9,823	5,483,181	21	5	42	130,552	4.28
1906		70	9,585	5,367,497	17	3	32	167,734	3.34
1907		60	10,653	6,665,392	23	5	45	148,120	4.22
1908		69	10,639	6,067,741	23	3	49	123,831	4.61
1909		67	10,361	5,987,835	25	3	46	130,170	4.44
1910		73	10,665	6,324,317	17		32	197,635	3.00
1911		75	10,772	7,109,372	16	5	39	182,292	3.62
1912		75	11,002	6,851,491	22	1	36	190,319	3.27
1913		70	10,836	7,012,687	20	2	45	155,837	4.15
1914		75	11,083	6,710,131	19	7	55	122,002	4.96
1915		76	10,768	6,354,484	23	2	38	167,223	3.53
1916		65	9,940	6,299,185	24	6	52	121,138	5.23
	Totals and averages,	1,017	183,704	105,412,833	351	64	711	148,260	3.82
1899	Carbon,	11	2,025	1,826,267	2		10	182,627	4.94
1900		11	2,052	1,863,637	1		3	621,212	1.46
1901		10	2,265	1,858,519	3		10	185,852	4.42
1902		10	2,242	1,104,462	1		4	276,116	1.78
1903		15	2,120	2,150,021	2		13	165,386	6.13
1904		20	2,381	2,253,512	2		7	321,930	2.94
1905		23	2,460	2,476,406			9	275,156	3.66
1906		23	2,740	2,240,823	2	1	6	373,470	2.19
1907		30	2,989	2,762,523	3	1	14	197,323	4.68
1908		22	3,531	2,784,946	4		9	309,438	2.55
1909		28	3,492	2,652,997	3	1	16	165,812	4.58
1910		33	3,575	3,214,169	3	1	15	214,278	4.20
1911		31	3,607	3,312,483	6	1	18	184,027	4.99
1912		24	4,083	2,843,876	1		8	355,484	1.96
1913		29	3,930	3,353,277	5	3	15	223,552	3.82
1914		22	5,769	3,186,691	3	7	18	177,038	3.12
1915		19	4,032	3,337,156	3		11	303,378	2.73
1916		30	3,409	2,966,975	3		7	423,854	2.05
	Totals and averages,	391	56,702	46,188,740	47	15	193	239,320	3.40
1899	Columbia,	6	1,346	1,002,469	2		5	200,494	3.71
1900		7	1,163	980,721	3		5	196,144	4.30
1901		5	714	1,209,859	2		4	302,465	5.60
1902		6	1,438	738,070			3	246,023	2.09
1903		5	1,454	1,353,904			3	451,301	2.06
1904		10	1,419	1,151,624	7		10	115,162	7.05
1905		9	1,567	1,229,697	2		7	175,671	4.47
1906		7	1,403	969,065	3	1	7	138,438	4.99
1907		8	1,168	1,188,268	1		4	297,067	2.72
1908		9	1,559	1,182,326	2		5	236,465	3.21
1909		8	1,568	1,093,103	1		2	546,551	1.28
1910		11	1,176	960,145	1		1	960,145	.85
1911		7	1,473	1,193,736	1		1	1,193,736	.68
1912		11	1,440	1,214,527	3		6	202,421	4.17
1913		11	1,393	1,214,648			4	303,662	2.87
1914		11	1,366	1,066,471	2		3	355,490	2.20
1915		8	1,334	1,202,465		2	4	300,616	3.00
1916		13	1,354	1,346,874	1		1	1,346,874	.73
	Totals and averages,	152	24,635	20,297,972	31	3	75	270,640	3.04

TABLE 8.—Continued

Years	Counties	Number of mines	Number of inside employes	Production in tons of 2,000 pounds	Fatal accidents by falls	Fatal accidents by explosions of gas	Total fatal accidents inside	Production in tons per fatal accident inside	Lives lost per 1,000 employes
1899	Dauphin,	2	1,583	817,328	1	----	8	102,166	5.05
1900		2	1,608	779,135	2	1	8	87,392	4.98
1901		2	1,562	830,572	3	----	7	118,653	4.48
1962		2	1,120	423,341	----	----	1	423,341	.89
1903		2	1,256	732,970	3	----	5	146,594	3.98
1904		9	1,269	723,414	----	1	*11	65,765	8.67
1905		10	1,350	723,126	1	1	5	144,625	3.70
1906		10	1,422	734,728	3	----	3	244,908	2.11
1907		12	1,393	829,980	2	----	5	165,996	3.59
1908		12	1,481	848,005	1	----	9	94,223	6.08
1909		12	1,419	932,393	1	----	2	466,197	1.41
1910		11	1,446	886,192	1	----	8	110,774	5.53
1911		11	1,530	946,963	4	1	10	94,696	6.54
1912		10	1,606	945,102	----	1	3	315,034	1.87
1913		13	1,687	1,060,270	2	----	5	212,054	2.96
1914		10	1,697	1,000,988	2	2	6	166,831	3.54
1915		9	1,716	972,110	2	----	3	324,037	1.75
1916		8	1,376	986,234	----	1	5	197,247	3.63
	Totals and averages,	147	26,521	15,172,846	28	8	104	145,893	3.92
1899	Susquehanna,	2	941	699,020	----	----	----	----	----
1900		2	904	556,003	----	----	----	----	----
1901		2	1,104	743,105	----	----	----	----	----
1902		2	1,086	452,758	2	----	2	226,379	1.84
1903		2	1,064	800,773	4	----	6	133,462	5.64
1904		2	1,102	692,440	2	----	6	115,407	5.44
1905		2	1,026	680,146	6	----	6	113,358	5.85
1906		3	1,028	562,103	2	----	6	93,684	5.84
1907		3	970	644,088	4	----	12	53,674	12.37
1908		1	1,005	487,900	2	----	2	243,950	1.99
1909		2	953	589,835	2	----	3	196,612	3.15
1910		2	971	628,808	4	----	4	157,202	4.12
1911		3	962	672,600	----	----	1	672,600	1.04
1912		3	1,044	582,510	3	----	7	83,216	6.70
1913		3	1,096	594,764	1	----	2	297,382	1.83
1914		3	1,204	658,249	3	----	4	164,562	3.32
1915		4	1,110	760,076	1	----	4	190,019	3.60
1916		4	1,118	791,326	3	----	3	263,775	2.68
	Totals and averages,	45	18,688	11,596,504	39	----	68	170,537	3.64
1899	Sullivan,	2	322	183,182	1	----	1	183,182	3.11
1900		2	337	235,112	3	----	3	78,371	8.90
1901		2	281	152,505	----	----	----	----	----
1902		3	523	409,017	3	----	5	81,803	9.56
1908		3	455	293,442	2	----	2	146,721	4.40
1904		3	443	294,305	1	----	1	294,305	2.26
1905		4	331	310,496	1	----	2	155,248	6.04
1906		4	414	358,627	1	----	2	179,313	4.83
1907		4	459	433,101	1	----	1	433,101	2.18
1908		4	583	550,712	2	----	2	275,356	3.43
1909		4	661	641,216	2	----	2	320,608	3.03
1910		4	614	632,874	----	----	1	632,874	1.63
1911		4	662	717,429	2	----	4	179,357	6.04
1912		4	677	649,235	----	----	----	----	----
1913		4	706	664,063	----	----	1	664,063	1.42
1914		4	744	643,730	----	----	----	----	----
1915		4	716	604,353	3	----	3	201,451	4.19
1916		4	682	553,308	2	----	2	276,654	2.93
	Totals and averages,	63	9,610	8,326,707	24	----	32	260,210	3.45

*Williamstown disaster.

TABLE 8.—Continued

Years	Counties	Number of mines	Number of inside employes	Production in tons of 2,000 pounds	Fatal accidents by falls	Fatal accidents by explosions of gas	Total fatal accidents inside	Production in tons per fatal accident inside	Lives lost per 1,000 employes
1899	Wayne.	1	353	309,069					
1900		1	11	21,862					
1901		1	589	369,462					
1902									
1903		1	125	68,895					
1904		1	125	71,353					
1905		1	136	67,008					
1906		3	202	71,381					
1907		3	270	85,594					
1908		2	212	63,906					
1909		2	184	50,339					
1910		2	125	51,576					
1911		2	84	70,150	1		1	70,150	11.91
1912		2	129	92,843					
1913		1	23	52,814					
1914		2	76	133,402					
1915		3	71	105,274	1		1	105,274	14.08
1916		1	45	144,743					
	Totals and averages.	29	2,760	1,829,671	2		2	914,671	.72

TABLE 9.—Miners and miners' laborers employed in the mines; number of fatal accidents per 1,000 employes; average number of days worked by breakers; average production per day, 1882-1916, inclusive

Years	Number of miners employed	Number of miners killed	Number of miners killed per 1,000 employes	Number of miners' laborers employed	Number of miners' laborers killed	Number of miners' laborers killed per 1,000 employes	Average number of days worked by breakers	Average production per day worked by breakers, net tons
1882,	22,843	135	5.91	15,229	56	3.68	218	160,814
1883,	25,319	136	5.37	16,879	67	3.97	232	162,704
1884,	27,100	132	4.87	19,606	81	4.13	192	189,941
1885,	28,305	160	5.65	20,128	86	4.27	204	187,413
1886,	25,970	131	5.04	17,068	68	3.98	196	198,728
1887,	29,558	102	3.45	17,548	57	3.25	208	202,675
1888,	34,547	169	4.89	21,952	87	3.96	218	213,922
1889,	30,504	194	6.36	19,368	79	4.08	197	221,978
Totals and averages,	224,146	1,159	5.13	147,778	581	3.93	208	192,272
1890,	28,936	146	5.05	18,620	95	5.10	210	214,220
1891,	30,552	180	5.89	19,590	119	6.07	213	233,340
1892,	30,779	180	5.84	22,110	111	5.02	202	253,599
1893,	32,881	195	5.93	22,853	108	4.73	202	261,500
1894,	33,357	218	6.54	23,942	91	3.80	175	291,240
1895,	34,553	179	5.18	24,638	115	4.67	187	304,539
1896,	37,003	204	5.51	26,530	134	5.09	170	316,725
1897,	36,932	210	5.69	27,277	99	3.63	151	348,219
Totals and averages,	264,993	1,512	5.71	185,560	872	4.70	189	277,934
1898,	36,377	176	4.84	24,060	124	5.15	151	349,753
1899,	36,421	199	5.46	23,946	114	4.75	179	338,091
1900,	36,832	184	4.99	24,613	95	3.86	176	325,928
1901,	37,804	224	5.92	26,265	122	4.64	195	344,075
1902,	36,392	114	3.13	25,443	62	2.44	*116	†356,387
1903,	36,823	204	5.54	27,533	110	4.00	211	356,552
1904,	39,848	233	5.85	31,217	145	4.64	213	345,513
1905,	42,078	308	7.32	31,967	148	4.63	208	378,111
Totals and averages,	302,575	1,642	5.43	215,044	920	4.28	181	349,301
1906,	41,801	226	5.41	29,652	133	4.48	206	350,192
1907,	43,035	309	7.18	29,984	136	4.54	229	379,103
1908,	44,340	313	7.05	32,853	154	4.68	211	345,940
1909,	44,675	264	5.91	32,232	126	3.91	205	391,336
1910,	43,651	254	5.82	32,040	147	4.59	212	394,736
1911,	45,324	306	6.75	32,905	176	5.35	234	388,535
1912,	44,696	262	5.86	33,438	117	3.50	220	383,758
1913,	44,346	286	6.45	33,973	148	4.36	242	378,624
Totals and averages,	351,868	2,220	6.31	257,077	1,137	4.42	220	376,528
1914,	45,897	296	6.45	37,030	126	3.40	229	398,208
1915,	46,422	281	6.05	36,379	143	3.93	221	404,424
1916,	43,706	269	6.15	27,751	112	4.04	246	356,424
Totals and averages,	136,025	846	6.22	101,160	381	3.77	232	386,352

*Strike during the year.
†Washeries worked during the strike. Time was not computed in the average days worked.

TABLE 10.—Employes inside and outside the mines; number of fatal accidents per 1,000 employes; production per fatality, 1881-1916, inclusive

Years	Inside				Outside			
	Employes	Fatal accidents	Lives lost per 1,000 employes	Production of coal in tons of 2,000 pounds for each life lost	Employes	Fatal accidents	Lives lost per 1,000 employes	Number of lives lost inside and outside per 1,000 employes
1881,	45,619	234	5.13	146,165	30,412	39	1.28	3.59
1882,	50,764	254	4.32	140,230	31,436	41	1.30	3.54
1883,	56,286	274	4.87	137,764	35,153	49	1.39	3.53
1884,	61,922	286	4.62	127,513	39,151	46	1.17	3.28
1885,	62,901	290	4.61	131,834	37,419	42	1.12	3.31
1886,	63,930	236	3.69	165,046	39,114	43	1.10	2.71
1887,	67,716	270	3.99	156,153	38,801	46	1.19	2.97
1888,	78,688	317	4.03	147,114	43,530	47	1.08	2.98
1889,	74,178	339	4.57	128,763	45,468	58	1.28	3.32
1890,	73,613	323	4.39	139,276	46,306	55	1.19	3.15
Totals and averages,	635,617	2,823	4.44	141,016	386,790	466	1.20	3.22
1891,	76,509	372	4.86	133,606	46,339	56	1.20	3.47
1892,	82,088	361	4.40	141,903	48,212	57	1.18	3.21
1893,	86,287	388	4.49	136,188	51,682	68	1.32	3.30
1894,	87,901	368	4.19	138,497	52,038	78	1.50	3.19
1895,	89,251	354	3.97	160,872	54,454	67	1.23	2.93
1896,	94,798	430	4.54	125,217	55,290	72	1.30	3.34
1897,	95,812	372	3.88	141,347	53,745	51	.95	2.83
1898,	91,171	360	3.95	146,674	51,249	51	.99	2.89
1899,	92,167	389	4.22	155,574	48,437	72	1.49	3.28
1900,	94,140	358	3.80	160,233	49,684	53	1.07	2.86
Totals and averages,	890,184	3,752	4.21	143,604	511,130	625	1.22	3.12
1901,	98,434	441	4.48	152,142	49,217	72	1.46	3.47
1902,	98,377	245	*2.49	168,739	49,762	55	1.11	2.03
1903,	102,055	426	4.17	176,602	49,772	92	1.85	3.41
1904,	110,362	496	4.49	148,376	50,968	99	1.94	3.69
1905,	116,371	551	4.73	142,735	51,883	93	1.79	3.83
1906,	114,998	456	3.97	141,258	51,177	101	1.98	3.35
1907,	117,849	601	5.10	143,189	50,925	107	2.10	4.20
1908,	124,233	596	4.79	140,173	50,270	82	1.63	3.88
1909,	123,272	490	3.98	163,722	47,923	77	1.61	3.31
1910,	121,542	509	4.19	164,409	46,633	92	1.97	3.57
Totals and averages,	1,127,493	4,811	4.27	154,138	498,530	870	1.75	3.49
1911,	126,037	615	4.88	147,833	47,301	84	1.78	4.03
1912,	127,807	498	3.90	169,532	47,291	103	2.18	3.43
1913,	128,667	557	4.33	164,501	46,643	67	1.44	3.56
1914,	134,073	534	3.98	170,767	46,826	66	1.41	3.32
1915,	131,296	527	4.01	169,597	46,043	61	1.32	3.32
1916,	116,092	497	4.61	169,718	43,077	68	1.58	3.55
Totals and averages,	763,972	3,228	4.28	165,805	277,181	449	1.62	3.53

*Year of the big strike, when an average of only 116 days was worked by the collieries.

TABLE 11.—Fatal accidents inside the mines; employes; production in net tons; fatalities per 1,000 employes; production per fatality by companies, 1911-1916, inclusive

Companies	Employes inside	Fatal accidents inside	Fatalities inside per 1,000 employes	Production	Production per fatality inside
Philadelphia and Reading Coal and Iron Co.,	111,692	418	3.74	72,985,845	174,607
Delaware, Lackawanna and Western Railroad Co.,	97,090	366	3.67	61,337,041	112,943
Delaware and Hudson Co.,	83,157	329	3.96	54,686,003	166,219
Lehigh Valley Coal Co.,	55,906	330	5.90	51,826,464	157,050
Pennsylvania Coal Co.,	53,288	216	4.05	36,690,074	169,861
Lehigh and Wilkes-Barre Coal Co.,	47,967	233	4.86	35,867,541	153,938
Susquehanna Coal Co.,	48,669	194	3.99	30,279,163	156,078
Lehigh Coal and Navigation Co.,	33,755	126	3.73	27,361,544	217,155
Totals,	531,524	2,212	4.16	371,033,675	167,738
Scranton Coal Co.,	22,956	124	5.40	13,588,580	109,585
Kingston Coal Co.,	14,103	69	4.88	11,132,800	161,344
Hillside Coal and Iron Co.,	16,049	51	3.18	10,427,261	204,456
Coxe Brothers and Co., Incorporated,	9,299	24	2.58	9,982,738	415,947
G. B. Markle Co.,	9,847	29	2.94	9,657,159	333,005
Temple Coal Co.,	5,988	24	4.00	4,264,572	177,690
West End Coal Co.,	5,487	21	3.83	4,199,877	199,994
Pardee Brothers and Co., Incorporated,	4,212	9	2.14	4,180,644	464,516
Price-Pancoast Coal Co.,	6,855	94	13.71	3,866,647	41,134
Forty Fort Coal Co.,	6,637	26	3.92	3,798,124	146,082
*A. Pardee and Co.,	5,111	7	1.37	3,603,599	514,800
Jermyn and Co.,	4,313	11	2.55	3,453,344	313,940
C. M. Dodson and Co.,	3,168	21	6.63	2,544,373	121,161
Saint Clair Coal Co.,	2,656	11	4.14	2,450,515	222,774
Lytle Coal Co.,	3,480	17	4.88	2,421,060	142,415
Lackawanna Coal Co., Limited,	3,767	16	4.24	2,388,363	149,273
Thomas Colliery Co.,	1,677	13	7.75	2,356,443	181,265
Dodson Coal Co.,	2,525	8	3.17	2,266,438	283,304
Mount Lookout Coal Co.,	3,461	19	5.48	2,212,831	116,465
Connell Anthracite Mining Co.,	2,063	2	.97	2,178,107	1,089,054
Pine Hill Coal Co.,	3,032	14	4.62	2,145,555	153,253
Harleigh-Brookwood Coal Co.,	3,045	22	7.22	2,123,999	96,545
Midvalley Coal Co.,	2,214	4	1.81	2,093,502	523,376
Maryd Coal Co.,	2,023	16	7.90	2,059,011	128,688
Alden Coal Co.,	3,408	12	3.52	2,062,818	171,902
Totals,	147,376	664	4.51	111,458,400	167,859
Oak Hill Coal Co.,	2,688	26	9.30	1,886,717	72,566
Haddock Mining Co.,	3,183	13	4.08	1,878,587	144,507
Estate, A. S. VanWickle,	2,375	5	2.10	1,807,434	361,487
Colonial Collieries Co.,	2,255	7	3.10	1,757,402	251,057
Greenough Red Ash Coal Co.,	2,359	15	6.36	1,720,005	114,667
Mount Jessup Coal Co., Limited,	2,671	7	2.62	1,679,496	239,928
Buck Run Coal Co.,	2,348	9	3.83	1,650,773	183,419
Excelsior Coal Co.,	2,665	15	5.63	1,593,951	106,263
Harwood Coal Co.,	1,934	2	1.03	1,543,538	771,769
Red Ash Coal Co.,	1,881	8	4.25	1,417,478	177,185
Moosic Mountain Coal Co.,	2,201	11	5.00	1,412,325	128,393
Shipman Koal Co.,	1,992	11	5.53	1,359,406	123,582
Girard Mammoth Coal Co.,	711	3	4.21	1,232,383	410,794
Northern Anthracite Coal Co.,	1,195	5	4.18	1,186,932	237,386
Peoples Coal Co.,	2,065	13	6.29	1,152,906	88,685
East Boston Coal Co.,	2,023	12	5.93	1,116,640	93,053
Wilkes-Barre Anthracite Coal Co.,	1,909	14	7.33	1,092,336	78,024
Locust Mountain Coal Co.,	1,352	5	3.69	1,041,433	208,287
Totals,	37,807	181	4.79	26,529,742	146,573

*Now Lehigh Coal and Navigation Company.

TABLE 11.—Continued

Companies	Employes inside	Fatal accidents inside	Fatalities inside per 1,000 employes	Production	Production per fatality inside
Raub Coal Co.,	1,968	9	4.57	980,028	108,892
Enterprise Coal Co.,	1,546	4	2.58	933,488	233,372
Mill Creek Coal Co.,	862	4	4.64	913,406	228,351
John S. Wentz and Co.,	885	2	2.26	877,987	438,993
Archbald Coal Co.,	1,391	15	10.78	820,728	54,715
M. S. Kemmerer and Co.,	1,090	1	.91	816,922	816,922
Buck Run Coal Co.,	1,724	9	5.17	808,316	89,813
Treverton Colliery Co.,	1,232	3	2.43	782,102	260,701
Traders Coal Co.,	1,618	6	3.70	746,062	124,344
George F. Lee Coal Co.,	1,487	5	3.36	728,114	145,623
Darkwater Coal Co.,	829	8	9.65	713,342	89,168
Green Ridge Coal Co.,	912	3	3.29	598,339	199,446
O'Boyle-Foy Anthracite Coal Co.,	805	3	3.98	546,581	182,194
Wilkes-Barre Colliery Co.,	823	5	6.08	519,111	103,822
Pittston Coal Mining Co.,	1,071	3	2.80	503,660	167,887
Totals,	18,243	80	4.38	11,288,186	141,102
Miscellaneous Companies,	29,022	91	3.14	14,908,551	163,830
Grand totals and averages,	763,972	3,228	4.23	535,218,554	165,805

TABLE 12.—Companies that had no fatal accidents, 1910-1916, inclusive

Names of Companies	1910	1911	1912	1913	1914	1915	1916	Total production without fatalities
	Production in tons of 2,000 pounds	Production in tons of 2,000 pounds	Production in tons of 2,000 pounds	Production in tons of 2,000 pounds	Production in tons of 2,000 pounds	Production in tons of 2,000 pounds	Production in tons of 2,000 pounds	
H. H. Smith and Co.,	85,928	103,074	58,416	78,070	93,187	100,862	67,671	587,208
South Side Coal Co.,	----	----	----	70,797	65,270	49,033	62,471	247,571
Carbondale Coal Mining Co.,	28,483	26,893	31,553	35,473	31,829	37,734	32,505	224,470
Beaver Valley Coal Co.,	15,035	----	5,077	6,748	22,635	39,327	45,101	133,923
Butcher Creek Coal Co.,	14,560	25,200	19,871	18,063	14,961	17,920	12,903	123,478
Cumbola Coal Co.,	----	----	----	----	----	----	*65,878	65,878
Shamokin Red Ash Coal Co.,	----	----	----	----	----	*23,699	34,318	58,017
Thomas R. Reese Coal Co.,	4,023	5,821	6,225	3,984	4,658	5,323	4,674	34,708
Sprucks Coal Co.,	----	----	----	----	----	*4,543	26,391	30,934
Meadow Hill Coal Co.,	----	----	----	----	----	----	*30,064	30,064
Wachna-Taylor Anthracite Coal Co.,	----	----	10,489	7,675	6,269	1,498	614	26,545
Black Heath Coal Co.,	----	----	----	5,507	3,414	4,956	9,103	22,980
John Gibbons Coal Co.,	----	----	----	----	----	----	*20,405	20,405
Thomas D. Bergen,	----	----	----	----	----	----	*10,192	10,192
Shawnee Coal Co.,	----	----	----	----	----	----	*6,630	6,630
Maxey Coal Co.,	----	----	----	----	----	----	*2,016	2,016
East Alden Coal Co.,	----	----	----	----	----	----	*408	408
Totals,	148,029	160,988	131,631	226,317	242,223	284,895	431,344	1,625,427

*New operation.

TABLE 13.—Average number of days worked by breakers; total production and average production per day, 1899-1916, inclusive

Years	Average number of days worked	Production in tons of 2,000 pounds	Average production per day excluding washery production	Production from washeries (net tons)
1899,	179	60,518,331	332,195	‡1,055,425
1900,	176	57,363,396	315,598	1,818,170
1901,	195	67,094,665	333,763	2,009,864
1902,	*116	41,340,935	†330,820	2,965,792
1903,	211	75,232,585	337,030	4,119,258
1904,	213	73,594,369	329,361	3,440,420
1905,	208	78,647,020	359,371	3,897,688
1906,	206	72,139,510	326,413	4,889,402
1907,	227	86,056,412	354,303	5,630,169
1908,	211	83,543,243	373,968	4,635,923
1909,	235	86,223,853	365,938	5,206,562
1910,	212	83,683,994	369,207	5,412,167
1911,	234	90,917,176	369,067	4,555,457
1912,	220	84,426,869	364,135	4,317,161
1913,	242	91,626,964	366,499	2,934,157
1914,	229	91,189,641	386,407	2,702,537
1915,	221	89,377,706	388,956	3,418,427
1916,	246	87,680,198	338,405	4,432,606

*Strike during the year.
†Washeries worked during the strike.
‡The production from washeries is not included in the production per day.

TABLE AA.—Part 1.—Number of net tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite, and permissible explosives used, 1916

Districts	Number of tons of coal shipped to market	Number of tons used at collieries for steam and heat	Number of tons sold to local trade and used by employes	Total production in tons of 2,000 pounds	Average number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives		
									Number of pounds of black powder used	Number of pounds of dynamite used	Number of pounds of permissible explosives used
First,	2,890,717	309,125	67,637	3,267,479	219	6,022	15	72	2,035,575	572,175	619,551
Second,	2,958,433	368,024	43,707	3,370,164	249	7,299	18	117	2,336,450	590,782	7,775
Third,	2,931,055	318,698	54,952	3,304,705	236	6,260	17	35	2,890,935	548,962	2,170,615
Fourth,	2,510,959	191,724	185,424	2,888,107	294	5,125	22	38	2,033,914	118,653	18,830
Fifth,	3,220,980	110,997	76,227	3,408,204	249	6,561	9	90	2,906,500	256,283	361,222
Sixth,	3,325,842	306,021	61,357	3,693,220	209	6,865	21	49	2,954,690	219,387	903,994
Seventh,	2,870,746	215,505	54,544	3,140,855	253	5,707	17	40	2,207,825	235,946	264,786
Eighth,	3,774,487	389,725	43,209	4,207,421	260	8,367	29	42	3,531,300	101,664	187,585
Ninth,	2,791,090	367,811	94,582	3,253,483	248	5,958	23	65	2,139,175	903,317	51,300
Tenth,	2,552,638	186,765	60,888	2,800,291	244	6,037	25	53	1,807,220	307,930	57,075
Eleventh,	3,606,670	306,098	310,470	3,623,238	230	5,962	30	108	2,001,875	335,373	223,326
Twelfth,	3,663,903	373,983	147,179	4,185,065	255	7,327	44	67	2,317,125	80,816	841,275
Thirteenth,	3,587,193	271,693	53,231	3,912,117	232	6,474	22	20	1,685,700	236,434	701,077
Fourteenth,	3,410,987	412,538	72,303	3,895,828	207	7,604	32	21	1,438,875	245,015	513,653
Fifteenth,	3,858,122	558,952	159,277	4,576,351	277	6,758	19	87	120,875	1,686,368	2,775
Sixteenth,	2,933,683	375,648	107,478	3,416,809	242	5,686	19	60	136,395	1,374,446	283,057
Seventeenth,	3,489,363	374,993	32,214	3,896,570	244	6,222	19	13	----------	837,711	436,035
Eighteenth,	3,249,570	466,346	53,620	3,769,536	256	5,699	23	81	362,450	714,240	637,058
Nineteenth,	2,528,134	478,119	29,561	3,035,814	272	5,124	16	116	28,475	803,969	375,541
Twentieth,	2,867,008	527,705	48,449	3,443,162	266	6,185	26	29	435,200	727,419	277,419
Twenty-first,	3,770,472	532,436	87,162	4,390,070	265	7,076	23	45	281,650	1,121,246	118,427
Twenty-second,	3,341,718	656,225	56,505	4,054,448	251	7,664	32	106	47,075	1,844,216	113,837
Twenty-third,	2,217,774	333,100	61,367	2,612,241	206	6,189	28	29	401,063	684,377	471,492
Twenty-fourth,	2,211,349	350,731	87,739	2,649,819	223	5,796	19	81	902,587	453,759	46,563
Twenty-fifth,	2,218,044	617,951	49,206	2,885,201	259	5,202	17	46	123,150	542,273	269,131
Totals, 1916,	76,180,937	9,400,973	2,098,288	87,680,198	246	159,139	565	1,510	35,126,079	15,542,761	9,953,399

TABLE AA.—Part 1.—1899-1915—Continued

Years	Number of tons of coal shipped to market	Number of tons used at collieries for steam and heat	Number of tons sold to local trade and used by employes	Total production in tons of 2,000 pounds	Average number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives: Number of pounds of black powder used	Explosives: Number of pounds of dynamite used	Explosives: Number of pounds of permissible explosives used
Totals, 1915,	77,578,441	9,815,643	1,983,622	89,377,706	221	177,339	588	995	42,763,060	15,376,447	5,577,707
Totals, 1914,	79,713,875	9,512,372	1,963,394	91,189,641	229	180,899	600	1,038	44,336,113	17,244,174	4,246,347
Totals, 1913,	80,325,964	9,357,762	1,943,238	91,626,964	242	175,310	624	1,125	44,001,660	16,093,035	3,323,645
Totals, 1912,	73,462,014	8,804,759	2,160,096	84,426,869	220	175,098	601	976	41,401,015	13,685,062	2,037,026
Totals, 1911,	79,775,010	9,152,073	1,990,093	90,917,176	234	173,336	699	1,124	47,946,483	13,369,056	2,122,264
Totals, 1910,	73,418,729	8,396,895	1,868,369	83,683,994	212	168,175	601	1,050	45,112,322	11,171,458	1,506,140
Totals, 1909,	70,314,739	8,103,810	1,805,284	80,223,833	205	171,195	567	1,034	41,191,857	10,727,616	666,827
Totals, 1908,	73,507,322	8,320,032	1,715,889	83,543,243	211	174,503	678	1,170	49,380,800	10,766,245	----------
Totals, 1907,	76,138,664	8,217,439	1,700,309	86,056,412	227	168,774	708	1,369	47,636,700	10,544,781	----------
Totals, 1906,	63,418,916	7,198,140	1,522,454	72,139,510	206	166,175	557	1,212	40,352,075	7,980,733	----------
Totals, 1905,	69,934,070	7,122,394	1,590,556	78,647,020	208	168,254	644	1,289	47,570,500	8,353,594	----------
Totals, 1904,	65,137,283	6,912,358	1,544,728	73,594,369	213	161,330	599	1,047	44,779,800	6,519,312	----------
Totals, 1903,	67,458,836	6,395,582	1,378,167	75,232,585	211	151,827	518	1,325	42,529,400	5,317,422	----------
Totals, 1902,	35,338,031	4,955,752	1,047,152	41,340,935	116	148,139	300	641	21,128,675	2,130,965	----------
Totals, 1901,	59,861,650	5,912,900	1,320,115	67,094,665	195	147,651	513	1,243	38,020,100	4,155,685	----------
Totals, 1900,	50,704,201	5,466,044	1,192,551	57,363,396	176	143,824	411	1,057	30,929,500	3,454,641	----------
Totals, 1899,	53,705,009	5,568,539	1,244,783	60,518,331	179	140,604	461	1,030	34,317,275	3,649,417	----------

TABLE AA.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use, 1916

Districts	Power Plant										Pumps				Haulage					Air Compressors	
	Boilers				Engines						Number	Total capacity in gallons per minute	Pumps Delivering Water to the Surface		Number of horses and mules	Locomotives				Number	Total capacity cubic feet per minute
	Cylindrical		Tubular		Steam Engines (All Classes)		Internal Combustion Engines (Gas)		Electric Dynamos (All Classes)				Number	Approximate number of gallons per minute delivered to surface		Gasoline	Steam	Air	Electric		
	Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total horse power											
First	7	145	117	17,505	210	15,956	1	30	31	4,290	154	68,446	53	26,661	355	4	20	------	59	9	1,950
Second	21	1,086	84	15,578	230	19,472	------	------	20	347	88	76,424	47	28,555	466	1	18	------	72	10	4,326
Third	------	------	58	13,190	204	14,363	------	------	4	225	30	37,780	36	21,378	387	------	8	33	35	5	140
Fourth	12	180	53	10,195	123	9,860	------	------	16	1,659	85	34,949	27	15,825	409	------	3	------	44	8	5,999
Fifth	19	822	38	8,414	125	10,462	16	2,566	5	7,130	45	22,280	28	13,505	417	------	7	1	110	12	675
Sixth	11	925	85	17,602	165	25,614	23	511	17	3,503	122	41,278	19	42,200	443	------	18	18	85	7	11,690
Seventh	------	------	97	14,725	137	10,713	------	------	8	2,275	94	57,780	33	29,970	385	------	9	------	77	4	2,486
Eighth	------	------	154	21,768	274	19,615	------	------	16	3,920	191	142,540	37	27,250	807	------	22	4	116	13	5,665
Ninth	------	------	88	23,466	256	27,635	------	------	17	2,445	176	76,108	46	32,199	650	------	13	6	37	6	6,466
Tenth	5	1,500	76	17,445	312	19,537	------	------	6	235	66	39,390	28	17,930	672	------	10	------	32	8	13,250
Eleventh	------	------	70	17,149	265	33,397	------	------	8	3,475	103	48,739	19	16,702	736	------	20	13	17	16	21,494
Twelfth	------	------	169	21,649	311	31,556	------	------	9	2,603	74	51,410	19	12,675	793	------	13	7	33	13	15,930
Thirteenth	------	------	103	18,163	278	33,600	------	------	6	2,500	130	71,994	38	28,244	519	------	13	3	63	12	16,914
Fourteenth	12	420	84	22,122	158	25,580	------	------	20	4,059	119	37,107	27	16,184	591	2	17	12	51	22	24,574
Fifteenth	------	------	160	34,720	241	25,561	1	7	12	1,520	62	57,734	54	38,268	543	1	68	10	28	23	13,527
Sixteenth	10	300	151	24,325	205	20,160	------	------	14	840	79	84,847	61	41,016	603	------	50	5	6	15	5,120
Seventeenth	3	186	77	17,972	90	28,359	------	------	------	------	29	46,909	23	40,570	203	------	38	------	73	8	12,584
Eighteenth	2	400	151	23,250	250	36,896	------	------	6	752	100	82,027	38	29,682	461	2	40	7	28	18	11,957
Nineteenth	------	------	126	25,145	311	36,181	------	------	20	6,225	129	96,027	41	22,167	369	------	24	------	24	11	7,135
Twentieth	------	------	166	23,690	321	48,393	1	30	5	1,375	169	124,187	38	17,654	537	------	17	17	18	15	7,811
Twenty-first	5	175	156	23,950	317	34,419	------	------	7	1,300	126	89,237	26	22,034	386	------	56	11	28	13	11,401
Twenty-second	15	555	172	28,800	351	50,416	3	150	10	2,135	146	131,272	42	30,451	622	4	44	2	27	22	98,508
Twenty-third	------	------	126	20,330	312	31,851	1	90	10	1,710	152	62,917	45	14,884	490	2	22	4	22	13	9,489
Twenty-fourth	------	------	125	16,465	329	31,568	------	------	10	2,215	138	71,679	41	12,029	494	3	14	------	19	18	10,074
Twenty-fifth	5	675	171	21,765	270	40,443	1	25	10	1,640	135	74,018	20	16,841	448	2	21	3	29	16	8,609
Totals	127	7,369	2,857	499,383	6,085	681,607	47	3,409	287	58,378	2,742	1,727,079	886	614,874	12,780	21	585	156	1,133	317	327,774

TABLE A.—Number of each class of employes in each district, 1916

Occupations of Employes	Districts												
	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	Ninth	Tenth	Eleventh	Twelfth	Thirteenth
Inside													
Mine foremen	20	16	12	13	18	17	15	23	20	17	17	17	19
Assistant mine foremen	31	23	33	37	82	47	44	66	79	50	63	59	69
Fire bosses	10	10	33	19	5	19	15	22	22	43	61	55	37
Miners	1,783	1,793	1,536	1,308	1,644	1,651	1,550	2,471	2,005	1,634	1,869	2,097	1,949
Miners' laborers	1,210	1,847	1,557	1,241	1,801	1,905	1,614	1,694	880	1,347	751	1,517	1,327
Machine miners	48	1	8	17	120	75	46	40	8				
Machine runners and scrapers	28	5	62	20	56	45	34	51	6	4			
Drivers and runners	347	580	497	427	311	421	263	569	529	572	544	581	300
Motormen and assistants	173	166	132	118	225	196	158	210	104	57	60	85	127
Doorboys and helpers	72	199	103	75	109	71	67	76	68	44	163	190	129
Trackmen and bratticemen	151	103	89	134	117	111	106	187	182	116	174	197	159
Timbermen and rockmen	97	38	105	146	103	77	88	274	92	64	195	133	117
Pumpmen and pipemen	64	40	46	42	55	44	63	48	102	71	60	62	70
Electricians and helpers	16	9	16	22	31	29	22	42	5	13	6	14	14
All other employes	248	636	617	418	498	610	383	712	438	504	643	716	686
Totals	4,298	5,466	4,846	4,037	5,175	5,318	4,468	6,485	4,540	4,536	4,606	5,723	5,003
Outside													
Superintendents	11	6	2	5	5	5	6	6	6	5	1	5	3
Foremen	17	23	20	13	16	13	11	9	11	25	13	15	14
Blacksmiths and carpenters	139	81	64	69	79	102	92	217	138	110	64	105	88
Engineers and firemen	235	217	173	117	160	216	121	196	231	249	205	256	199
Machinists and helpers	45	32	49	24	9	37	25	62	29	31	11	23	18
Trackmen and helpers	31	24	11	9	5	16	15	45	17	13	18	9	19
Slate pickers (boys)	227	229	87	201	200	205	277	236	78	140	118	141	185
Slate pickers (men)	194	255	225	86	108	167	57	91	106	117	46	109	29
Office employes	40	25	23	29	33	27	30	17	36	37	37	22	28
All other employes	785	941	760	535	771	759	605	1,003	766	774	843	919	888
Totals	1,724	1,833	1,414	1,088	1,386	1,547	1,239	1,882	1,418	1,501	1,356	1,604	1,471
Grand totals inside and outside	6.022	7,299	6,260	5,125	6,561	6,865	5,707	8,367	5,958	6,037	5,962	7,327	6,474

TABLE A.—Continued

Occupations of Employes	Districts												Grand totals inside and outside
	Fourteenth	Fifteenth	Sixteenth	Seventeenth	Eighteenth	Nineteenth	Twentieth	Twenty-first	Twenty-second	Twenty-third	Twenty-fourth	Twenty-fifth	
Inside													
Mine foremen	17	34	18	28	21	17	14	21	27	14	15	10	460
Assistant mine foremen	47	72	48	17	57	61	134	94	109	30	57	84	1,493
Fire bosses	61	6	10	59	35	42		14	7	51	42	29	707
Miners	2,099	2,192	1,707	1,304	1,815	1,280	1,521	1,491	1,854	2,092	1,822	1,239	43,706
Miners' laborers	1,479	849	955	132	560	559	799	1,208	990	647	466	416	27,751
Machine miners													363
Machine runners and scrapers													311
Drivers and runners	496	266	242	130	228	217	229	196	256	265	264	199	8,929
Motormen and assistants	148	99	28	163	60	37	9	57	62	27	18	39	2,558
Doorboys and helpers	128	55	62	25	31	21	47	70	62	33	39	46	1,985
Trackmen and bratticemen	235	156	128	125	132	131	128	179	254	119	187	239	3,839
Timbermen and rockmen	311	322	157	1,102	327	206	203	222	342	169	249	211	5,350
Pumpmen and pipemen	55	55	66	6	33	38	29	46	49	78	51	32	1,305
Electricians and helpers	18	14	4	33	8	9	4	9	8	9	3	6	364
All other employes	450	350	157	1,239	541	830	1,306	911	1,321	820	802	1,135	16,971
Totals	5,544	4,470	3,582	4,363	3,848	3,448	4,423	4,518	5,341	4,354	4,015	3,685	116,092
Outside													
Superintendents	6	6	9	4	10	9	1	6	7	7	4	2	137
Foremen	12	24	22	15	21	19	11	19	20	12	14	8	397
Blacksmiths and carpenters	159	205	193	208	130	113	78	189	138	91	96	93	3,041
Engineers and firemen	285	357	301	277	307	281	277	379	379	276	235	288	6,217
Machinists and helpers	67	61	87	172	54	32	18	28	35	47	31	19	1,046
Trackmen and helpers	43	53	37	35	27	28	13	31	30	24	22	25	600
Slate pickers (boys)	238	176	180	218	206	221	208	294	191	369	223	73	4,921
Slate pickers (men)	66	70	31	21	54	86	60	93	118	76	82	23	2,370
Office employes	46	52	62	35	45	50	45	53	46	52	53	29	952
All other employes	1,138	1,284	1,182	874	997	837	1,051	1,466	1,359	881	1,021	957	23,396
Totals	2,060	2,288	2,104	1,859	1,851	1,676	1,762	2,558	2,323	1,835	1,781	1,517	43,077
Grand totals inside and outside	7,604	6,758	5,686	6,222	5,699	5,124	6,185	7,076	7,664	6,189	5,796	5,202	159,169

TABLE B.—Causes of fatal accidents inside and outside the mines, and number attributable to each cause; number of wives made widows and children made orphans by reason of such accidents, 1916

Causes of Fatal Accidents	Districts																					
	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	Ninth	Tenth	Eleventh	Twelfth	Thirteenth	Fourteenth	Fifteenth	Sixteenth	Seventeenth	Eighteenth	Nineteenth	Twentieth	Twenty-first
Inside																					
Falls of coal, slate and roof,	9	7	10	10	4	10	10	13	8	9	8	18	9	11	4	8	5	11	2	11	5
Mine cars,	3		3	2		2	4	3	1	3	4	6	5	2	2	3	1	2	2	1	6
Explosions of gas,				1	1			4	1	1	8	15	2	1				1			
Suffocation by gas, etc.,				1							2		1	3	2		1	3			
Explosions of powder and dynamite,		4		2					2				1		1					3	
Blasts, premature and otherwise,	3	3	4	4	2	2	1	6	8	4	8	2	1	4			1			2	1
Falling into shafts, slopes, etc.,													1	1	1		1		1	2	
Crushed at batteries,														1	1		1				1
Kicked by mules, etc.,						1										1			1		
Machinery,																					
Electricity,						2			1	2				1			2		1		
Miscellaneous,		1		1		2		2	1	2		1		4	3	1	1	1	7	2	4
Totals,	15	15	17	21	7	19	15	28	22	21	30	42	20	28	14	13	13	18	14	21	17
Outside																					
Cars,				1	1		1			2		1		2	1	3	4	2	1	1	3
Machinery,		2				1		1		1				1	1	2	1	1		1	1
Suffocation in chutes, etc.,		1					1								1					2	
Boiler explosions,																					
Electricity,										1											
Miscellaneous,					1	1			1			1	2	1	2	1	1	2	1	1	2
Totals,		3		1	2	2	2	1	1	4		2	2	4	5	6	6	5	2	5	6
Grand totals inside and outside,	15	18	17	22	9	21	17	29	23	25	30	44	22	32	19	19	19	23	16	26	23

Widows, 373; orphans, 874.

TABLE B.—Continued

Causes of Fatal Accidents	Districts					Percentages for 1916	Percentages for 1915	Percentages for 1914	Percentages for 1913	Percentages for 1912	Percentages for 1911	Percentages for 1910	Percentages for 1909	Percentages for 1908	Percentages for 1907	Percentages for 1906	Percentages for 1905
	Twenty-second	Twenty-third	Twenty-fourth	Twenty-fifth	Totals												
Inside																	
Falls of coal, slate and roof,	12	13	7	4	218	43.86	50.85	43.26	46.86	49.40	41.14	49.71	51.84	47.65	46.42	46.93	53.44
Mine cars,	3	3	3	3	67	13.48	15.37	14.23	15.44	15.66	14.96	18.07	14.49	15.10	14.64	14.69	14.88
Explosions of gas,	2	2	2	2	43	8.65	6.26	8.05	8.62	7.03	5.53	3.93	5.71	9.56	7.32	9.43	5.99
Suffocation by gas, etc.,	----	1	1	2	17	3.42	1.90	2.25	2.69	1.01	13.98	2.75	3.47	.67	3.33	1.53	1.81
Explosions of powder and dynamite,	----	----	----	----	13	2.62	1.52	2.44	1.97	5.02	3.42	4.32	4.49	3.86	2.83	6.14	2.91
Blasts, premature and otherwise,	4	2	1	3	66	13.28	13.09	14.23	11.13	10.24	10.89	11.79	9.59	11.58	11.65	11.62	7.99
Falling into shafts, slopes, etc.,	1	3	1	----	12	2.41	2.28	8.80	5.39	3.61	3.42	3.73	3.67	3.69	4.16	4.39	7.80
Crushed at batteries,	1	----	1	----	6	1.21	.57	.56	.54	.80	.81	.59	.82	.34	.33	.44	.55
Kicked by mules, etc.,	----	----	1	----	4	.81	.19	.37	.54	.40	.49	.20	1.23	.67	1.33	.66	.36
Machinery,	----	----	----	----	----	----	.19	.19	.36	----	.65	.39	----	.17	.33	.44	----
Electricity,	----	----	----	----	9	1.81	.76	.56	.18	1.01	.32	.59	1.22	.17	.50	----	----
Miscellaneous,	3	2	1	3	42	8.45	7.02	5.06	6.28	5.82	4.39	3.93	3.47	6.54	7.16	3.73	4.17
Totals,	26	26	18	17	497	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Outside																	
Cars,	5	1	----	----	29	42.65	45.90	50.00	55.23	39.81	30.95	43.48	33.77	42.68	44.86	35.65	24.73
Machinery,	1	1	----	----	15	22.06	16.39	18.18	17.91	19.42	26.19	27.17	25.97	35.37	27.10	22.77	25.48
Suffocation in chutes, etc.,	----	----	----	----	5	7.35	4.92	----	2.98	11.62	9.53	2.18	12.99	1.22	2.80	8.91	11.83
Boiler explosions,	----	----	----	----	----	----	3.28	----	----	----	1.10	----	----	1.22	.94	.99	1.08
Electricity,	----	----	----	----	1	1.47	1.64	1.52	1.49	1.94	1.19	----	----	1.22	1.87	----	----
Miscellaneous,	----	----	1	----	18	26.47	27.87	30.30	22.39	27.18	30.95	27.17	27.27	18.29	22.43	31.68	26.88
Totals,	6	2	1	----	68	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Grand totals inside and outside,	32	28	19	17	565	----	----	----	----	----	----	----	----	----	----	----	----

TABLE C.—Causes of non-fatal accidents inside and outside the mines, and number attributable to each cause, 1916

Causes of Non-Fatal Accidents	Districts																									Totals	Percentages
	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	Ninth	Tenth	Eleventh	Twelfth	Thirteenth	Fourteenth	Fifteenth	Sixteenth	Seventeenth	Eighteenth	Nineteenth	Twentieth	Twenty-first	Twenty-second	Twenty-third	Twenty-fourth	Twenty-fifth		
Inside																											
Falls of coal, slate and roof	29	31	7	12	27	10	18	10	16	11	34	24	9	7	16	10	1	15	42	13	9	16	7	22	11	398	32.10
Mine cars	23	20	15	11	25	11	6	13	17	10	22	16	3	6	14	15	2	13	11	4	10	21	6	7	8	309	24.92
Explosions of gas	----	1	----	1	2	2	----	4	6	----	8	2	----	----	2	----	1	11	4	6	3	15	4	16	13	101	8.14
Explosions of powder and dynamite	2	3	----	1	----	5	2	----	2	----	1	1	----	----	1	----	1	1	----	1	1	2	1	2	----	27	2.18
Blasts, premature and otherwise	4	8	6	7	14	5	4	4	6	8	7	4	3	2	----	4	----	2	3	1	2	2	1	7	2	106	8.55
Falling into shafts, slopes, etc.	----	----	----	----	----	1	----	----	----	----	----	----	----	----	----	1	----	----	----	----	2	1	----	----	----	5	.40
Crushed at batteries	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	----	1	----	----	2	----	----	----	4	.32
Kicked by mules	1	5	1	2	2	----	1	1	----	----	----	1	----	----	1	----	----	1	1	1	----	----	----	1	----	19	1.53
Machinery	----	----	2	----	1	1	----	----	----	1	1	----	----	----	----	----	----	----	3	----	1	1	----	----	----	11	.89
Electricity	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Miscellaneous	10	21	----	2	13	8	6	3	10	15	26	15	4	4	17	10	4	19	22	1	10	14	2	17	7	260	20.97
Totals	60	89	31	36	84	43	37	35	57	45	99	63	19	19	51	40	10	62	87	27	38	74	21	72	41	1,240	100.00
Outside																											
Cars	1	8	2	----	----	3	----	4	3	2	3	2	----	2	11	7	2	8	16	2	2	11	2	4	4	99	36.67
Machinery	----	6	1	----	----	2	----	----	1	----	5	----	----	----	4	----	----	4	6	----	----	5	1	1	----	36	13.33
Boiler explosions	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Electricity	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Miscellaneous	11	14	1	2	6	1	3	3	4	6	1	2	1	----	21	13	1	7	7	----	5	16	5	4	1	135	50.00
Totals	12	28	4	2	6	6	3	7	8	8	9	4	1	2	36	20	3	19	29	2	7	32	8	9	5	270	100.00
Grand totals inside and outside	72	117	35	38	90	49	40	42	65	53	108	67	20	21	87	60	13	81	116	29	45	106	29	81	46	1,510	----

TABLE D.—Number of gaseous and non-gaseous mines in operation, number of foremen, assistants and fire bosses; production and percentage of production in net tons from gaseous and non-gaseous mines and washeries, by districts, 1916

Districts	Number of gaseous mines in operation	Number of mine foremen	Number of assistant mine foremen	Number of fire bosses	Number of non-gaseous mines in operation	Number of mine foremen	Number of assistant mine foremen	Production in tons of 2,000 pounds from gaseous mines	Production in tons of 2,000 pounds from non-gaseous mines	Production in tons of 2,000 pounds from washeries	Percentage of production from gaseous mines	Percentage of production from non-gaseous mines	Percentage of production from washeries
First,	4	4	7	10	23	16	24	593,952	2,404,343	269,184	18.18	74.20	7.62
Second,	3	5	4	10	26	11	19	770,233	2,440,253	159,678	22.85	72.41	4.74
Third,	17	10	31	33	5	2	2	2,147,526	537,221	619,958	64.98	16.22	18.80
Fourth,	11	10	33	19	1	3	4	2,423,159	217,426	247,522	83.90	7.52	8.58
Fifth,	19	12	75	5	8	6	7	2,771,129	324,887	312,188	81.31	9.53	9.16
Sixth,	10	13	42	19	18	4	5	2,527,738	1,102,492	62,990	68.44	29.85	1.71
Seventh,	11	6	29	15	13	9	15	1,706,319	1,434,536	----------	54.33	45.67	----------
Eighth,	20	15	54	22	8	8	12	3,009,836	1,197,585	----------	71.54	28.46	----------
Ninth,	19	17	76	22	6	3	3	3,145,903	107,580	----------	96.69	3.31	----------
Tenth,	24	8	37	43	22	9	13	2,101,560	682,220	16,511	75.05	24.36	.59
Eleventh,	16	15	61	61	2	2	2	3,181,842	114,362	327,034	87.82	3.15	9.03
Twelfth,	16	13	52	55	4	4	7	3,526,168	479,466	179,431	84.25	11.46	4.29
Thirteenth,	27	17	66	37	21	2	3	3,514,954	227,210	169,953	89.84	5.80	4.36
Fourteenth,	29	15	46	61	11	2	1	3,638,794	78,186	178,848	93.40	2.00	4.60
Fifteenth,	27	25	52	6	32	9	20	2,647,411	1,895,142	33,798	57.85	41.41	.74
Sixteenth,	15	5	19	10	42	13	29	1,398,150	1,965,758	52,901	40.92	57.53	1.55
Seventeenth,	16	25	14	59	7	3	3	3,136,223	521,627	238,720	80.49	13.39	6.12
Eighteenth,	19	18	49	35	14	3	8	2,874,052	820,142	75,342	76.24	21.76	2.00
Nineteenth,	27	14	57	42	9	3	4	2,605,972	114,076	315,766	85.84	3.76	10.40
Twentieth,	18	14	134	----------	----------	----------	----------	3,352,215	----------	90,947	97.36	----------	2.64
Twenty-first,	14	13	86	14	14	8	8	2,803,657	1,129,819	456,594	63.86	25.74	10.40
Twenty-second,	27	26	107	7	1	1	2	3,965,839	85,569	3,040	97.81	2.11	.08
Twenty-third,	14	6	22	51	14	8	8	1,830,782	747,141	34,318	70.08	28.60	1.32
Twenty-fourth,	24	13	50	42	10	2	7	2,118,139	523,144	8,536	79.94	19.74	.32
Twenty-fifth,	22	10	84	29	----------	----------	----------	2,305,854	----------	579,347	79.92	----------	20.08
Totals and percentages,	449	329	1,287	707	311	131	206	64,097,407	19,150,185	4,432,606	73.10	21.84	5.06

TABLE E.—Quantity of coal produced by each company that produced 300,000 or more tons, and the number of persons employed, 1916

Names of Companies	Inspection Districts	Number of employes inside	Number of employes outside	Total number of employes	Production of coal in net tons
Philadelphia and Reading Coal and Iron Company,	Eighteenth, Nineteenth, Twentieth, Twenty-first, Twenty-second, Twenty-third, Twenty-fourth, Twenty-fifth,	16,683	6,994	23,677	13,112,726
Delaware, Lackawanna and Western Railroad Company,	Third, Fourth, Fifth, Sixth, Seventh, Ninth, Twelfth, Thirteenth, Fourteenth,	15,713	3,365	19,078	10,876,113
Delaware and Hudson Company,	First, Second, Third, Fourth, Fifth, Sixth, Seventh, Tenth, Twelfth,	13,497	4,556	18,053	8,980,257
Lehigh Valley Coal Company,	Seventh, Eighth, Ninth, Tenth, Eleventh, Thirteenth, Fifteenth, Sixteenth, Eighteenth, Twentieth, Twenty-first, Twenty-second, Twenty-fifth,	10,084	3,516	13,600	8,218,806
Pennsylvania Coal Company,	Fourth, Sixth, Seventh, Eighth,	8,119	2,445	10,564	5,978,445
Lehigh and Wilkes-Barre Coal Company,	Eleventh, Twelfth, Thirteenth, Fourteenth, Sixteenth,	6,538	2,510	9,048	5,252,019
Susquehanna Coal Company,	Fourteenth, Twenty-first, Twenty-third, Twenty-fourth, Twenty-fifth,	7,221	3,260	10,481	4,554,238
Lehigh Coal and Navigation Company,	Sixteenth, Seventeenth, Eighteenth,	5,495	2,413	7,908	4,520,780
Scranton Coal Company,	First, Second, Third, Fourth, Sixth,	3,152	1,243	4,395	2,058,436
Coxe Brothers and Company, Incorporated,	Fifteenth, Sixteenth,	1,506	672	2,178	1,748,447
G. B. Markle Company,	Fifteenth,	1,423	736	2,159	1,612,044
Hillside Coal and Iron Company,	First, Second, Seventh, Eighth,	2,336	774	3,110	1,551,545
Kingston Coal Company,	Ninth, Twelfth,	1,851	602	2,453	1,394,709
Pardee Brothers and Company, Incorporated,	Fifteenth,	780	279	1,059	694,907
West End Coal Company,	Fourteenth,	733	285	1,018	684,383
Temple Coal Company,	First, Fourth,	648	224	872	604,692
Locust Mountain Coal Company,	Twenty-first,	501	295	796	549,415
Harleigh Brookwood Coal Company,	Fifteenth, Twenty-second,	660	312	972	549,052
Forty Fort Coal Company,	Ninth,	773	242	1,015	542,410
Price-Pancoast Coal Company,	Second,	1,033	203	1,236	541,412
Thomas Colliery Company,	Twenty-first,	215	252	467	505,564
Jermyn and Company,	Seventh,	717	158	875	485,382
Dodson Coal Company,	Eighteenth,	380	180	560	453,051
Saint Clair Coal Company,	Eighteenth,	413	287	700	412,625
Lytle Coal Company,	Nineteenth,	560	222	752	389,385
C. M. Dodson and Company,	Sixteenth,	470	289	759	360,594

Alden Coal Company,	Fourteenth,	612	189	801	358,707
Lackawanna Coal Company, Limited,	First,	518	155	673	350,862
Midvalley Coal Company,	Twenty-second,	359	161	520	342,276
Connell Anthracite Mining Co.,	First,	364	141	505	335,437
Pine Hill Coal Company,	Nineteenth,	522	233	755	333,784
Maryd Coal Company,	Eighteenth,	296	156	442	319,667
Buck Run Coal Company,	Nineteenth,	397	134	531	305,458
Colonial Collieries Company,	Twenty-third,	380	220	600	303,220
Totals,		104,909	37,703	142,612	79,290,848

The 34 companies named in this table, out of 123 companies in the region, produced 79,290,848 tons, or 90.42 per cent. of the total output, 87,680,198 tons.

10—3—1916

TABLE F.—Classification of employes killed or fatally injured inside and outside the mines, 1899-1916, inclusive

Employes Killed or Fatally Injured	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	Totals
Inside																			
Mine foremen and assistants,	2	-----	5	2	3	3	1	2	2	3	1	2	2	1	3	2	5	5	44
Fire bosses and assistants,	2	5	2	3	2	1	2	6	2	3	2	2	5	1	8	4	1	3	54
Miners,	199	184	224	114	202	233	308	226	309	313	264	254	306	262	286	296	281	274	4,535
Miners' laborers,	114	95	122	62	110	145	148	133	136	154	126	147	176	117	148	126	143	109	2,311
Drivers and runners,	39	33	45	27	46	31	31	32	46	49	37	40	45	42	33	28	49	30	674
Doorboys, etc.,	18	8	6	5	12	20	14	9	18	18	11	6	15	8	7	8	10	10	203
All other employes,	15	33	37	32	51	63	47	48	88	56	49	58	66	67	72	70	47	66	965
Totals,	389	358	441	245	426	496	551	456	601	596	490	509	615	498	557	534	527	497	8,786
Outside																			
Foremen,	1	-----	-----	-----	1	1	-----	2	-----	2	1	-----	4	1	3	1	2	-----	19
Blacksmiths and carpenters,	2	2	-----	2	4	5	5	5	1	5	4	6	7	3	1	5	3	2	62
Engineers and firemen,	6	2	5	7	6	3	6	3	8	4	7	4	2	7	1	5	6	4	86
Slate pickers,	10	9	9	12	9	11	24	14	16	14	7	8	8	5	3	2	5	4	170
All other employes,	53	40	58	34	72	79	58	77	82	57	58	74	63	87	59	53	45	58	1,107
Totals,	72	53	72	55	92	99	93	101	107	82	77	92	84	103	67	66	61	68	1,444
Grand totals inside and outside,	461	411	513	300	518	595	644	557	708	678	567	601	699	601	624	600	588	565	10,230

TABLE G.—Number and causes of fatal accidents in and about the mines, by decades, 1870-1916, inclusive

Causes of Fatal Accidents	1870-1879	Percentages	1880-1889	Percentages	1890-1899	Percentages	1900-1909	Percentages	1910-1916	Percentages	Grand totals	Percentages for 47 years
Inside												
Falls of coal, slate and roof,	927	46.44	1,351	50.37	1,928	51.87	2,291	49.16	1,730	46.30	8,227	48.99
Mine cars,	263	13.18	470	17.52	535	14.39	710	15.23	572	15.31	2,550	15.19
Explosions of gas,	243	12.17	250	9.32	399	10.74	352	7.55	256	6.85	1,500	8.93
Suffocation by gas, etc.,	53	2.66	10	.37	114	3.07	103	2.21	159	4.25	439	2.61
Explosions of powder and dynamite,	76	3.81	82	3.06	117	3.15	206	4.42	113	3.02	594	3.54
Blasts, premature and otherwise,	124	6.21	182	6.79	280	7.53	435	9.34	451	12.07	1,472	8.77
Falling into shafts, slopes, etc.,	100	5.01	117	4.36	178	4.79	241	5.17	159	4.25	795	4.73
Crushed at batteries,	12	.60	5	.19	12	.32	17	.37	26	.70	72	.43
Mules,	16	.80	8	.30	44	1.18	37	.79	16	.43	121	.72
Electricity,							10	.22	27	.72	37	.22
Miscellaneous causes,	182	9.12	207	7.72	110	2.96	258	5.54	228	6.10	985	5.87
Totals and percentages,	1,996	100.00	2,682	100.00	3,717	100.00	4,660	100.00	3,737	100.00	16,792	100.00
Outside												
Cars,	76	30.16	167	39.11	199	31.74	316	38.03	234	43.25	992	37.04
Machinery,	66	26.19	110	25.76	127	20.26	212	25.51	117	21.63	632	23.60
Suffocation in chutes, etc.,	14	5.56	3	.70	33	5.26	54	6.50	31	5.73	135	5.04
Boiler explosions,	21	8.33	29	6.79	36	5.74	9	1.08	3	.56	98	3.66
Electricity,							3	.36	7	1.29	10	.37
Miscellaneous causes,	75	29.70	118	27.64	232	37.00	237	28.52	149	27.54	811	30.29
Totals and percentages,	252	100.00	427	100.00	627	100.00	831	100.00	541	100.00	2,678	100.00
Grand totals inside and outside,	2,248		3,109		4,344		5,491		4,278		19,470	

Note.—This compilation of fatalities for 47 years shows that 92.76 per cent. of the accidents inside the mines were caused by falls, cars, gas and suffocation, explosions of powder and dynamite, blasts and falling into shafts and slopes.

TABLE H.—Nationality of employes killed or fatally injured inside and outside the mines, 1892-1916, inclusive

Nationalities	1892-1895	1896-1900	1901-1905	1906-1910	1911-1915	1916
American,	310	404	617	618	591	135
English,	124	132	94	78	72	15
Welsh,	154	176	122	122	84	9
Scotch,	8	21	12	9	6	3
Irish,	287	332	212	159	114	7
German,	93	97	97	80	65	5
Totals,	976	1,162	1,154	1,066	932	174
Polish,	420	609	669	926	819	145
Hungarian,	195	186	103	89	37	8
Italian,	67	68	142	246	261	56
Slavonian,	30	42	151	200	270	29
Lithuanian,	17	36	152	321	386	62
Austrian,	20	39	84	77	123	35
Russian,	7	39	88	150	204	51
Greek,	5	15	9	13	39	3
Swedish,	3	10	4	5	6	
French,	1	2	2		2	
Tyrolean,		3	9	13	8	1
Bohemian,		1		3	4	
Assyrian,			1		1	
Canadian,			2			
Montenegrin,				2	2	
Horwat,					7	
Magyar,					8	
Bulgarian,					1	
Syrian,					1	
Croatian,					1	
Hebrew,						1
Totals,	765	1,050	1,416	2,045	2,180	391
Grand totals,	1,741	2,212	2,570	3,111	3,112	565

TABLE I.—Production of coal; production per employe inside; quantity of explosives used and production per each pound of explosives used, 1899-1916, inclusive

Years	Production in tons of 2,000 pounds	Average number of tons of coal produced per employe inside	Explosives			Average number of tons of coal produced for each pound of explosives used
			Number of pounds of black powder used	Number of pounds of dynamite used	Number of pounds of permissible explosives used	
1899,	60,518,331	657	34,317,275	3,649,417		1.59
1900,	57,363,396	609	30,929,500	3,454,641		1.67
1901,	67,094,665	682	38,020,100	4,155,685		1.59
1902,	41,340,935	*482	21,128,675	2,130,965		†1.77
1903,	75,232,585	‡737	42,529,400	5,317,422		1.57
1904,	73,594,369	662	44,779,800	6,519,312		1.43
1905,	78,647,020	667	47,570,500	8,353,594		1.41
1906,	72,139,510	627	40,352,075	7,980,733		1.41
1907,	86,056,412	730	47,636,700	10,544,781		1.48
1908,	83,543,243	672	49,380,800	10,766,245		1.39
1909,	80,223,833	651	41,190,857	10,724,616	666,827	1.53
1910,	83,683,994	689	45,112,322	11,171,458	1,506,140	1.45
1911,	90,917,176	721	47,846,483	13,369,056	2,122,264	1.44
1912,	84,426,869	661	41,461,015	13,685,062	2,037,026	1.48
1913,	91,626,964	712	44,001,660	16,093,035	3,323,645	1.44
1914,	91,189,641	680	44,336,113	17,244,174	4,246,347	1.39
1915,	89,377,706	681	42,763,060	15,376,447	5,577,707	1.40
1916,	87,680,198	‡755	35,126,079	15,542,761	9,953,399	1.45

The ton of 2,000 pounds is used so that a comparison can be made with the bituminous production per pound of explosives used.

*This decrease in production per employe inside was caused by the small number of days worked on account of the strike.

†The increase in production per pound of powder used was caused by the production of the washeries during the strike.

‡The increase in production per employe was due to the large production of the washeries.

TABLE J.—Number of employes inside and outside the mines by counties, 1899-1916, inclusive

Counties	1899	1900	1901	1902	1903	1904	1905	1906	1907
Carbon,	3,993	4,242	4,365	3,805	4,051	4,467	4,240	4,469	4,782
Columbia,	2,303	2,033	2,329	2,339	2,236	2,192	2,368	2,246	2,295
Dauphin,	2,390	2,577	2,353	1,945	2,140	2,113	2,167	2,233	2,124
Lackawanna,	30,886	32,811	34,798	35,333	37,470	40,675	40,859	41,429	42,742
Luzerne,	50,803	52,015	53,280	52,766	55,639	59,136	60,734	54,441	58,975
Northumberland,	14,697	15,105	14,187	14,863	14,580	14,345	15,208	14,730	15,709
Schuylkill,	33,392	33,259	33,907	34,950	33,443	35,979	40,465	40,289	39,870
Sullivan,	465	521	434	752	648	665	536	634	719
Susquehanna,	1,210	1,250	1,409	1,386	1,363	1,392	1,307	1,320	1,275
Wayne,	406	11	589	----------	253	366	370	384	463
Totals,	140,604	143,824	147,651	148,139	151,827	161,330	168,254	166,175	168,774

Counties	1908	1909	1910	1911	1912	1913	1914	1915	1916
Carbon,	5,522	5,155	5,362	5,223	5,778	5,689	8,021	5,794	4,695
Columbia,	2,412	2,393	1,812	2,066	2,166	2,119	2,060	1,995	1,998
Dauphin,	2,294	2,215	2,229	2,280	2,347	2,450	2,469	2,486	2,029
Lackawanna,	42,418	44,213	43,214	43,991	43,927	43,925	44,124	44,000	40,152
Luzerne,	63,099	60,500	59,395	62,880	63,128	63,898	68,202	67,081	58,404
Northumberland,	15,581	14,878	15,133	15,148	15,392	15,075	15,320	14,898	14,065
Schuylkill,	40,775	39,457	38,653	39,285	39,822	39,670	38,004	38,521	35,410
Sullivan,	875	963	920	992	996	1,024	1,063	1,053	956
Susquehanna,	1,302	1,227	1,267	1,313	1,391	1,420	1,539	1,395	1,400
Wayne,	225	194	190	160	151	40	97	116	60
Totals,	174,503	171,195	168,175	173,338	175,098	175,310	180,899	177,339	159,169

TABLE K.—Production of coal in tons of 2,000 pounds by counties, 1899-1916, inclusive

Counties	1899	1900	1901	1902	1903	1904	1905	1906	1907
Carbon,	1,826,267	1,863,637	1,858,519	1,104,462	2,150,021	2,253,512	2,476,406	2,246,823	2,762,523
Columbia,	1,002,469	980,721	1,209,859	738,070	1,353,904	1,151,624	1,229,697	969,065	1,188,268
Dauphin,	817,328	779,135	830,572	423,341	732,970	723,414	123,126	734,723	829,980
Lackawanna,	11,838,821	13,755,961	17,258,125	11,851,169	20,046,133	19,007,628	19,709,164	18,840,561	22,433,409
Luzerne,	22,278,712	21,481,122	23,963,869	14,577,949	27,878,362	27,705,288	29,992,636	26,612,192	30,853,087
Northumberland,	4,860,292	4,690,944	5,430,991	3,162,066	5,518,580	5,516,647	5,483,181	5,367,497	6,665,392
Schuylkill,	13,694,171	12,998,899	15,277,658	8,622,103	16,389,505	16,173,158	17,975,160	16,376,538	20,160,970
Sullivan,	183,182	235,112	152,505	409,017	293,442	294,305	310,496	358,627	433,101
Susquehanna,	699,020	556,003	743,105	452,758	800,773	692,440	680,146	562,103	644,088
Wayne,	309,069	21,862	369,462	----------	68,895	71,353	67,008	71,381	85,594
Totals,	60,518,331	57,363,396	67,094,665	41,340,935	75,232,585	73,594,369	78,647,020	72,139,510	86,056,412

Counties	1908	1909	1910	1911	1912	1913	1914	1915	1916
Carbon,	2,784,946	2,652,997	3,214,169	3,312,483	2,843,876	3,353,277	3,186,691	3,337,156	2,966,975
Columbia,	1,182,326	1,093,103	960,145	1,193,736	1,214,527	1,214,648	1,066,471	1,202,465	1,346,874
Dauphin,	848,005	932,393	886,192	946,963	945,102	1,060,270	1,000,988	972,110	986,234
Lackawanna,	21,631,995	20,489,212	21,182,921	22,598,414	20,617,308	21,836,671	21,649,788	21,697,563	20,983,978
Luzerne,	31,728,997	30,992,306	32,106,979	35,061,582	32,643,232	36,326,287	36,973,767	35,266,086	32,497,845
Northumberland,	6,067,741	5,987,835	6,324,317	7,109,372	6,851,491	7,012,687	6,710,131	6,354,484	6,299,185
Schuylkill,	18,196,714	16,794,597	17,696,013	19,234,447	17,986,745	19,511,483	19,166,424	19,078,139	21,109,730
Sullivan,	550,712	641,216	632,874	717,429	649,235	664,063	643,730	604,353	553,308
Susquehanna,	487,900	589,835	628,808	672,600	582,510	594,764	658,249	760,076	791,326
Wayne,	63,906	50,339	51,576	70,150	92,843	52,814	133,402	105,274	144,743
Totals,	83,543,243	80,223,833	83,683,994	90,917,176	84,426,869	91,626,964	91,189,641	89,377,706	87,680,198

TABLE L.—Fatal accidents per 1,000 employes inside and outside the mines, and production in tons per fatal accident, by years and by decades, 1870-1916, inclusive

Years	Employes	Fatal accidents	Fatal accidents per 1,000 employes	Production in tons of 2,000 pounds	Production per fatal accident	Fatal accidents per 1,000,000 tons produced
1870,	35,600	211	5.93	14,172,004	67,166	14.89
1871,	37,488	210	5.60	15,532,252	73,963	13.52
1872,	44,745	223	4.98	15,567,973	69,811	14.32
1873,	48,199	264	5.48	21,001,521	79,551	12.57
1874,	53,402	231	4.33	19,930,240	86,278	11.59
1875,	69,966	238	3.40	23,402,646	98,330	10.17
1876,	70,474	228	3.24	23,440,666	102,810	9.73
1877,	66,842	194	2.90	24,727,213	127,460	7.85
1878,	63,964	187	2.92	20,900,966	111,770	8.95
1879,	68,847	262	3.81	31,036,600	118,460	8.44
Totals and percentages,	559,527	2,248	4.02	209,712,081	93,288	10.72
1880,	73,373	202	2.75	27,974,532	138,488	7.22
1881,	76,031	274	3.59	34,202,558	125,284	7.98
1882,	82,200	291	3.54	35,057,470	120,472	8.30
1883,	91,421	323	3.53	37,747,369	116,865	8.56
1884,	101,073	332	3.28	36,468,738	109,846	9.10
1885,	100,320	332	3.31	38,232,155	115,157	8.68
1886,	103,044	279	2.71	38,950,932	139,609	7.16
1887,	106,517	316	2.97	42,156,300	133,406	7.50
1888,	122,218	364	2.98	46,635,037	128,118	7.81
1889,	119,646	397	3.32	43,650,768	109,952	9.09
Totals and percentages,	975,843	3,109	3.10	381,075,819	122,572	8.16
1890,	119,919	378	3.15	44,986,286	119,011	8.40
1891,	123,308	428	3.47	49,701,322	116,125	8.61
1892,	130,309	418	3.21	51,226,978	122,553	8.16
1893,	138,069	456	3.30	52,841,110	115,880	8.63
1894,	139,939	446	3.19	50,966,920	114,276	8.75
1895,	143,705	421	2.93	56,948,756	135,270	7.39
1896,	150,088	502	3.34	53,843,250	107,257	9.32
1897,	149,557	423	2.83	52,581,036	124,305	8.04
1898,	142,420	411	2.89	52,812,675	128,498	7.78
1899,	140,604	461	3.28	60,518,331	131,276	7.62
Totals and percentages,	1,377,909	4,344	3.15	526,426,634	121,185	8.25
1900,	143,824	411	2.86	57,363,396	139,570	7.16
1901,	147,651	513	3.47	67,094,665	130,789	7.65
1902,	148,139	300	2.03	41,340,935	137,803	7.26
1903,	151,827	518	3.41	75,232,585	145,237	6.89
1904,	161,330	595	3.69	73,594,369	123,688	8.08
1905,	168,254	644	3.83	78,647,020	122,123	8.19
1906,	166,175	557	3.35	72,139,510	129,514	7.72
1907,	168,774	708	4.20	86,056,412	121,549	8.23
1908,	174,503	678	3.88	83,543,243	123,220	8.12
1909,	171,195	567	3.31	80,223,833	141,488	7.07
Totals and percentages,	1,601,672	5,491	3.42	715,235,946	130,256	7.68

TABLE L.—Continued

Years	Employes	Fatal accidents	Fatal accidents per 1,000 employes	Production in tons of 2,000 pounds	Production per fatal accident	Fatal accidents per 1,000,000 tons produced
1910,	168,175	601	3.57	83,683,994	139,241	7.18
1911,	173,338	699	4.03	90,917,176	130,067	7.69
1912,	175,098	601	3.43	84,426,869	140,477	7.12
1913,	175,310	624	3.56	91,626,964	146,838	6.81
1914,	180,899	600	3.32	91,189,641	151,982	6.58
1915,	177,339	588	3.32	89,377,706	152,003	6.58
1916,	159,169	565	3.55	87,680,198	155,186	6.44
Totals and percentages,	1,209,328	4,278	3.54	618,902,548	144,671	6.91
Grand totals and percentages,	5,724,279	19,470	3.40	2,451,353,058	125,904	7.94

Note.—The Anthracite Mine Law became effective in 1870 and the average number of fatalities for the first decade, 1870-1879 inclusive, was 4.02 per 1,000 employes and 10.72 for every 1,000,000 tons produced.

The average number of fatalities for the second decade, 1880-1889 inclusive, was 3.10 per 1,000 employes and 8.16 for every 1,000,000 tons produced.

The average number of fatalities for the third decade, 1890-1899 inclusive, was 3.15 per 1,000 employes and 8.25 for every 1,000,000 tons produced.

The average number of fatalities for the fourth decade, 1900-1909 inclusive, was 3.42 per 1,000 employes and 7.68 for every 1,000,000 tons produced.

The average number of fatalities for the seven years, 1910-1916 inclusive, was 3.54 per 1,000 employes and 6.91 for every 1,000,000 tons produced.

The record for 1916 of 3.55 lives lost for every 1,000 employes and 6.44 for every 1,000,000 tons produced is a good record under the circumstances and is gratifying to the Department.

ANTHRACITE DISTRICTS

FIRST DISTRICT

LACKAWANNA, SUSQUEHANNA, SULLIVAN AND WAYNE COUNTIES

Forest City, Pa., February 16, 1917.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor to transmit herewith my annual report as Inspector of Mines of the First Anthracite District for the year ending December 31, 1916.

Respectfully submitted,

BENJAMIN MAXEY,
Inspector.

SUMMARY OF STATISTICS

Number of collieries,	14
Number of mines,	27
Number of mines in operation,	27
Number of gaseous mines in operation,	4
Number of non-gaseous mines in operation,	23
Number of tons of coal shipped to market,	2,580,997
Number of tons used at mines for steam and heat,	276,005
Number of tons sold to local trade and used by employes,	60,390
Number of tons produced,	2,917,392
Number of tons produced by compressed air machines,	.....
Number of tons produced by electrical machines,	225,041
Number of persons employed inside of mines,	4,298
Number of persons employed outside,	1,724
Number of persons employed inside between 16 and 21 years,	365
Number of persons employed outside between 14 and 21 years,	386
Number of fatal accidents inside,	15
Number of fatal accidents outside,	.....
Number of non-fatal accidents inside,	60
Number of non-fatal accidents outside,	12
Number of tons of coal produced per fatal accident inside,	194,492
Number of tons produced per fatal accident inside and outside,	194,492
Number of persons employed per fatal accident inside,	287
Number of persons employed per fatal accident outside,	.....
Number of persons employed per fatal accident inside and outside,	401
Number of persons employed per non-fatal accident inside,	72
Number of persons employed per non-fatal accident outside,	144
Number of persons employed per non-fatal accident inside and outside,	84
Number of wives made widows,	11
Number of children made orphans,	19
Number of steam locomotives inside,	1
Number of steam locomotives outside,	19
Number of compressed air locomotives inside,	.....
Number of compressed air locomotives outside,	.....
Number of electric motors inside,	59
Number of electric motors outside,	.....
Number of gasoline locomotives inside,	4
Number of gasoline locomotives outside,	.....
Number of cylindrical boilers,	7
Number of tubular boilers,	117
Number of steam engines of all classes,	210

Number of internal combustion engines (gas),	1
Number of electric dynamos,	31
Number of pumps of all classes,	154
Number of pumps delivering water to surface,	53
Number of air compressors,	9
Number of fans in use,	23
Number of new mines opened,	1
Number of old mines abandoned,	1

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Delaware and Hudson Company,	597,667
Hillside Coal and Iron Company,	593,012
Scranton Coal Company,	385,464
Lackawanna Coal Company, Limited,	313,270
Connell Anthracite Mining Company,	299,497
Mt. Jessup Coal Company, Limited,	217,044
Moosic Mountain Coal Company,	174,580
Northern Anthracite Coal Company,	172,031
Temple Coal Company,	66,990
Rackett Brook Coal Company,	38,118
Carbondale Coal Mining Company,	29,022
O'Boyle-Foy Anthracite Coal Company,	21,949
Clinton Falls Coal Company,	8,200
Wachna-Taylor Anthracite Coal Company,	548
Total,	2,917,392

Production by Counties

Lackawanna,	1,587,591
Susquehanna,	706,541
Sullivan,	494,025
Wayne,	129,235
Total,	2,917,392

TABLE B.—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Total number of employes	Number of employes inside per fatal accident	Number of employes outside per fatal accident	Number of employes inside per non-fatal accident	Number of employes outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Delaware and Hudson Co.,	2	------	2	8	------	8	298,833	74,708	597	186	783	298	------	75	------
Hillside Coal and Iron Co.,	3	------	3	2	------	2	197,671	296,506	919	298	1,217	306	------	459	------
Scranton Coal Co.,	------	------	------	7	1	8	------	55,066	510	349	859	------	------	73	349
Lackawanna Coal Co., Limited,	2	------	2	5	------	5	156,635	62,654	518	155	673	259	------	104	------
Connell Anthracite Mining Co.,	1	------	1	7	1	8	299,497	42,785	364	141	505	364	------	52	141
Mt. Jessup Coal Co., Limited,	1	------	1	15	8	23	217,044	14,470	465	254	719	465	------	31	32
Moosic Mountain Coal Co.,	3	------	3	7	------	7	58,193	24,940	305	47	352	102	------	44	------
Northern Anthracite Coal Co.,	1	------	1	4	------	4	172,031	43,007	220	86	306	220	------	55	------
Temple Coal Co.,	------	------	------	2	------	2	------	33,495	103	56	159	------	------	51	------
Rackett Brook Coal Co.,	2	------	2	2	1	3	19,059	19,059	132	51	183	66	------	66	51
Carbondale Coal Mining Co.,	------	------	------	1	------	1	------	29,022	44	27	71	------	------	44	------
Elk Brook Coal Co.,*	------	------	------	------	1	1	------	------	------	10	10	------	------	------	10
Miscellaneous companies,	------	------	------	------	------	------	------	------	121	64	185	------	------	------	------
Totals and averages,	15	------	15	60	12	72	194,492	48,623	4,298	1,724	6,022	287	------	72	144

*In course of development for strippings.

TABLE C.—Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside.														
Falls of coal,	----	----	----	----	----	----	----	1	1	----	----	----	2	13.33
Falls of roof,	----	1	1	----	----	----	2	----	----	2	----	1	7	46.67
Mine cars,	1	----	----	1	----	1	----	----	----	----	----	----	3	20.00
Blasts, premature and otherwise,	----	----	----	----	----	1	----	----	----	----	----	2	3	20.00
Totals,	1	1	1	1	----	2	2	1	1	2	----	3	15	100.00
Outside. (No accidents.)														

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside.														
Falls of coal,	1	----	----	----	----	1	2	1	1	----	----	----	6	10.00
Falls of roof,	4	1	1	----	1	1	----	----	----	2	2	2	14	23.33
Mine cars,	2	1	----	4	2	3	5	1	2	----	2	1	23	38.33
Explosions of powder and dynamite,	----	1	----	----	----	----	----	----	----	1	----	----	2	3.33
Blasts, premature and otherwise,	----	----	----	----	1	1	----	----	----	2	----	----	4	6.67
By falling,	----	----	----	----	----	----	----	----	----	----	1	1	2	3.33
Struck by piece of coal,	----	----	----	----	----	----	----	----	----	1	----	----	1	1.67
Struck by rope,	----	----	----	----	----	----	----	1	----	----	----	----	1	1.67
Mules,	----	----	----	----	----	----	----	----	----	----	1	----	1	1.67
Struck by timber,	----	1	----	----	----	2	----	----	----	----	----	1	4	6.67
Struck by rail,	----	----	----	----	----	1	----	----	----	----	----	----	1	1.67
Lifting rock,	----	----	----	1	----	----	----	----	----	----	----	----	1	1.66
Totals,	7	4	1	5	4	9	7	3	3	6	6	5	60	100.00
Outside.														
Cars,	----	----	----	----	----	----	1	----	----	----	----	----	1	8.34
Scalded by steam,	----	----	----	----	----	----	----	----	----	----	2	----	2	16.67
Struck by rope,	1	----	----	----	----	----	----	----	----	1	1	----	3	25.00
Struck by stone,	----	----	----	----	----	----	----	----	1	----	----	----	1	8.33
Struck by nail,	----	----	----	1	----	----	1	----	----	----	----	----	2	16.67
Circular saw,	----	----	----	----	----	----	1	----	----	----	----	----	1	8.33
Struck by bar,	----	----	----	----	1	----	----	----	----	----	----	----	1	8.33
Struck by timber,	----	----	----	----	----	----	1	----	----	----	----	----	1	8.33
Totals,	1	----	----	1	1	----	4	----	1	1	3	----	12	100.00
Grand totals,	8	4	1	6	5	9	11	3	4	7	9	5	72	----

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,	----	1	----	----	----	1	2	----	----	2	----	2	8
Miners' laborers,	----	----	----	----	----	----	----	1	1	----	----	1	3
Motormen and assistants,	1	----	----	----	----	----	----	----	----	----	----	----	1
Doorboys and helpers,	----	----	----	1	----	----	----	----	----	----	----	----	1
Footmen,	----	----	1	----	----	----	----	----	----	----	----	----	1
Masons,	----	----	----	----	----	1	----	----	----	----	----	----	1
Totals,	1	1	1	1	----	2	2	1	1	2	----	3	15
Outside (No accidents.)													

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,	4	2	----	----	2	4	4	----	2	5	1	3	27
Miners' laborers,	1	----	1	3	1	2	1	1	----	----	3	1	14
Drivers and runners,	1	2	----	----	----	1	----	----	1	1	1	----	7
Motormen and assistants,	----	----	----	----	1	1	1	----	----	----	----	----	3
Doorboys and helpers,	----	----	----	----	----	----	----	----	----	----	----	1	1
Trackmen and bratticemen,	----	----	----	1	----	----	1	1	----	----	----	----	3
Engineers,	----	----	----	----	----	----	----	----	----	----	1	----	1
Machinists,	----	----	----	----	----	----	----	1	----	----	----	----	1
Electricians and helpers,	----	----	----	----	----	1	----	----	----	----	----	----	1
Headmen,	1	----	----	1	----	----	----	----	----	----	----	----	2
Totals,	7	4	1	5	4	9	7	3	3	6	6	5	60
Outside													
Machinists,	----	----	----	1	----	----	----	----	----	----	----	----	1
Blacksmiths and carpenters,	----	----	----	----	----	----	2	----	----	----	----	----	2
Engineers and firemen,	----	----	----	----	----	----	2	----	----	----	2	----	4
Trackmen and helpers,	----	----	----	----	1	----	----	----	----	----	----	----	1
Laborers,	1	----	----	----	----	----	----	----	1	----	----	----	2
Drivers and runners,	----	----	----	----	----	----	----	----	----	1	1	----	2
Totals,	1	----	----	1	1	----	4	----	1	1	3	----	12
Grand totals,	8	4	1	6	5	9	11	3	4	7	9	5	72

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	1												1
Polish,				1				1	1				3
Italian,						2				1		2	5
Slavonian,												1	1
Lithuanian,		1								1			2
Austrian,							2						2
Russian,			1										1
Totals,	1	1	1	1		2	2	1	1	2		3	15

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	2	1		2	2	2	5	1			5		20
English,							1						1
Welsh,	1												1
Irish,							1						1
German,							1					1	2
Polish,		2		1	1	1			1	1	2		9
Italian,	2		1	2	1	4			1	2	1	3	17
Slavonian,						1	1	1	1	1	1		6
Lithuanian,										1			1
Austrian,	2			1			2	1		1		1	8
Russian,	1	1			1	1			1	1			6
Totals,	8	4	1	6	5	9	11	3	4	7	9	5	72

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and types of safety lamps used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Delaware and Hudson Co.										
Clinton Colliery:										
Clinton,	Wayne, Susquehanna Lackawanna	H—Top,	60		19	6		Non-gas.,		
		B—Clifford,	50		1,475	7		Non-gas.,		
Hillside Coal and Iron Co.										
Forest City Colliery:										
Clifford,	Susquehanna	B or Dunmore No. 1,	31					Non-gas.,		
		B or Dunmore No. 3,	53	282				Non-gas.,		
Number 2,		C or Clark,	72					Non-gas.,		
Number 2,		B or Dunmore No. 3,	56	399				Non-gas.,		
Gray,		B or Dunmore No. 3,	36		405	6¼		Non-gas.,		
Scranton Coal Co.										
Ontario Colliery:										
Tunnell,	Lackawanna	B or Dunmore No. 1,	45		1,400	Level		Non-gas.,		
Tunnell,		F or Surface,	30							
Blue Ridge,		B or Dunmore No. 2,	27	158				Non-gas.,		
Klondike,		D or New County,	60		250	Level		Non-gas.,		
Sturgis,		C or Clark,	84	242				Non-gas.,		
Sturgis,		B or Dunmore No. 2,	72							

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and types of safety lamps used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Lackawanna Coal Co., Ltd. Lackawanna Colliery:										
Lackawanna,	Lackawanna	F or Diamond,	60					Gaseous,	5	
		E or Rock,	48							
		E or Grassy,	66							
		D or Top New County	36							
		D or Bottom New Co.	37							
		C or Bottom Clark	26							
		B or Dunmore No. 2,	42	567						
Connell Anthracite Mining Co. Connell Colliery:										
Connell,	Sullivan,	B—Loyalsock Basin,	48		3,850	1¾	1	Non-gas.,		
Mt. Jessup Coal Co., Limited. Mt. Jessup Colliery:										
Mt. Jessup,	Lackawanna	C or Clark,	72				1	Gaseous,	18	
		D or New County,	36	300				Non-gas.,		
		B or Top Dunmore,	36	300				Gaseous,	6	
		B or Bottom Dunmore	60	425				Gaseous,	41	
Moosic Mountain Coal Co. Moosic Mountain Colliery:										
Moosic Mountain,	Lackawanna	B or Dunmore No. 2,	60		4,000	7		Non-gas.,		
		B or Dunmore No. 3,	42				1	Non-gas.,		
		B or Dunmore No. 1,	24				1	Non-gas.,		

Northern Anthracite Coal Co. Murray Colliery: Murray,	Sullivan,	B or Bernice,	66	96				Non-gas.,		
Temple Coal Co. Northwest Colliery: Northwest,	Lackawanna	E or Top Mills,	36		220	14		Non-gas.,		
		E or Middle Mills,	28		220	14				
		D or Bottom Mills,	30		352	14				
		C or Clark,	66		2,100	5				
		B or Dunmore No. 3,	29		330	4				
Rackett Brook Coal Co. Rackett Brook Colliery: Rackett Brook,	Lackawanna	C or Clark,	112	50			11	Non-gas.,		
		B or Dunmore,			150	30				
Carbondale Coal Mining Co. Boland Colliery: Boland,	Lackawanna	C or Clark,	54		200	15		Non-gas.,		
		B or Dunmore No. 3,	30		400	25				
O'Boyle-Foy Anthracite Coal Co. O'Boyle-Foy Colliery: O'Boyle-Foy,	Sullivan,	B or Bernice,	68	121				Non-gas.,		
			36	111						
			48	68	200	8				
Clinton Falls Coal Co. Clinton Falls Colliery: Clinton Falls,	Wayne,	B or Dunmore No. 2, B or Dunmore No. 3,	60				4	Non-gas.,		
Wachna-Taylor Anthracite Coal Co. Wachna-Taylor,	Sullivan,	B or Bernice,	62		400	8 to 14		Non-gas.,		

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Delaware and Hudson Co.												
Clinton Colliery:												
Clinton,	Wayne, Susquehanna, Lackawanna	H—Top,	Guibal,	17	4	4.4	Electricity,	52,600	50,620	54,695	2	118
		B—Clifford No. 3,	Guibal,	20	5	5	Steam,	77,450	77,820	78,050	4	212
Hillside Coal and Iron Co.												
Forest City Colliery:												
Clifford,	Susquehanna	B or Dunmore No. 1,	Guibal,	20	60	1	Steam,	64,673	57,622	65,441	4	182
		B or Dunmore No. 3,										
Number 2,		C or Clark,	Guibal,	18	70	1	Steam,	51,750	48,820	54,920	3	126
Number 2,		B or Dunmore No. 3,	Guibal,	24	65	1	Steam,	73,725	70,100	74,640	5	188
Gray,		B or Dunmore No. 3,	Guibal,	20	60	.5	Electricity,	75,569	65,599	77,057	7	258
Scranton Coal Co.												
Ontario Colliery:												
Tunnell,	Lackawanna	B or Dunmore No. 1,	Guibal,	14	90	.6	Steam,	14,100	14,800	13,500	3	128
Tunnell,		F or Surface,										
Blue Ridge,		B or Dunmore No. 2,	Guibal,	15	75	.7	Steam,	48,950	54,000	37,000	2	41
Klondike,		D or New County,	Guibal,	12	90	.6	Steam,	48,000	52,000	41,000	3	123
Sturgis,		C or Clark,	Guibal,	20	65	1.2	Steam,	72,650	81,120	65,430	4	185
Sturgis,		B or Dunmore No. 2,										
Lackawanna Coal Co., Ltd.												
Lackawanna Colliery:												
Lackawanna,	Lackawanna	F or Diamond,	Guibal,	20	67	.8	Steam,	131,800	139,900	107,000	8	518
		E or Rock,										
		E or Grassy,										
		D or Top New County										
		D or Bottom New Co.										
		C or Bottom Clark										
		B or Dunmore No. 2,										

Connell Anthracite Mining Co.												
Connell Colliery:												
Connell,	Sullivan,	B—Loyalsock Basin,	Guibal,	16	100		Electricity,	84,000	84,000	84,000	5	362
Mt. Jessup Coal Co., Limited.												
Mt. Jessup Colliery:												
Mt. Jessup,	Lackawanna	C or Clark,	Guibal,	14	118	1.4	Steam,	47,000	50,200	41,000	3	465
		D or New County,	Guibal,	14	118	1.4	Steam,	18,000	18,600	15,200	1	
		B or Top Dunmore,	Guibal,	14	118	1.4	Steam,	17,000	19,100	15,600	1	
		B or Bottom Dunmore	Guibal,	16	100	2	Steam,	60,000	69,000	44,900	5	
Moosic Mountain Coal Co.												
Moosic Mountain Colliery:												
Moosic Mountain,	Lackawanna	B or Dunmore No. 2,	Home-made,	10	120	2	Steam,	73,000	79,800	74,300	6	305
		B or Dunmore No. 3,										
		B or Dunmore No. 1,	Home-made,	8	135	1.5	Steam,	26,000	30,350	26,200		
Northern Anthracite Coal Co.												
Murray Colliery:												
Murray,	Sullivan,	B or Bernice,	Guibal,	16	85	1.6	Steam,	72,500	72,500	68,600	3	220
Temple Coal Co.												
Northwest Colliery:												
Northwest,	Lackawanna	E or Top Mills,	Guibal,	15	90	1.3	Steam,	28,500	29,800	27,880	1	103
		E or Middle Mills,										
		D or Bottom Mills,										
		O or Clark,										
		B or Dunmore No. 3,										
Rackett Brook Coal Co.												
Rackett Brook Colliery:												
Rackett Brook,	Lackawanna	C or Clark,	Jeffrey,	6	80	1.5	Electricity,	49,000	48,500	49,500	1	55
		B or Dunmore,										
Carbondale Coal Mining Co.												
Boland Colliery:												
Boland,	Lackawanna	C or Clark,	Guibal,	6	220	.3	Steam,	20,000	20,000	20,000	2	44
		B or Dunmore No. 3,										
O'Boyle-Foy Anthracite Coal Co.												
O'Boyle-Foy Colliery:												
O'Boyle-Foy,	Sullivan,	B or Bernice,	Guibal,	18	60	.8	Steam,	50,200	54,200	55,440	4	85
Clinton Falls Coal Co.												
Clinton Falls Colliery:												
Clinton Falls,	Wayne,	B or Dunmore No. 2,						8,500	9,000	7,000	1	23
		B or Dunmore No. 3,										
Wachna-Taylor Anthracite Coal Co.												
Wachna-Taylor Colliery,	Sullivan,	B or Bernice,						16,000	18,500	11,000	1	13

TABLE J.—Operators and mines, name of coal bed, kind of openings, mining machines used and approximate number of tons produced by machines

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of opening	Gaseous or non-gaseous	Mining Machines		Approximate number of tons produced by machines
						Electric	Compressed air	
Connell Anthracite Mining Co.: Connell,	Sullivan,	Loyalsock Coal Basin,	48	Drift,	Non-gas.,	14		225,041

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	General Superintendent	Postoffice	Superintendent	Postoffice	Railroad to Mine
Delaware and Hudson Co. Clinton, Clinton Washery,	Wayne, Susquehanna, Lackawanna,	Cadwallader Evans, Jr.	Scranton,	Richard Beers,	Carbondale,	Delaware and Hudson
Hillside Coal and Iron Co. Forest City,	Susquehanna,	Joseph P. Jennings,	Scranton,	Arthur Wrightson,	Forest City,	Erie
Scranton Coal Co. Ontario, Ontario Washery,	Lackawanna,	Daniel Young, Sr.,	Scranton,	J. J. Aitken,	Priceburg,	N. Y., O. and W.
Lackawanna Coal Co., Ltd. Lackawanna,	Lackawanna,	F. H. Hemelright,	Scranton,	Joseph Reese,	Olyphant,	Erie and D., L. and W.
Connell Anthracite Mining Co. Connell,	Sullivan,	W. L. Connell,	Scranton,			Lehigh Valley
Mt. Jessup Coal Co., Ltd. Mt. Jessup,	Lackawanna,			Edward H. Ford,	Peckville,	D., L. and W., N. Y., O. and W., Erie and D. and H.
Moosic Mountain Coal Co. Moosic Mountain,	Lackawanna,	Charles P. Ford,	Marshwood,	Charles P. Ford,	Marshwood,	D., L. and W.
Northern Anthracite Coal Co. Murray,	Sullivan,	M. J. Murray, Sr.,	Dunmore,	J. F. Flannelly,	Lopez,	Lehigh Valley
Temple Coal Co. Northwest,	Lackawanna,	F. H. Hemelright,	Scranton,	T. J. Aston,	Carbondale,	O. and W., and Erie
Rackett Brook Coal Co. Rackett Brook,	Lackawanna,	E. H. Leaning,	Carbondale,	John R. Bryden, Jr.	Carbondale,	Delaware and Hudson
Carbondale Coal Mining Co. Boland,	Lackawanna,	John J. Boland,	Carbondale,	John J. Boland,	Carbondale,	Delaware and Hudson

TABLE 1.—Operators, location of collieries, railroads, etc.—Continued

Names of Operators and Collieries	County	General Superintendent	Postoffice	Superintendent	Postoffice	Railroad to Mine
O'Boyle-Foy Anthracite Coal Co.						
O'Boyle-Foy,	Sullivan,	M. W. O'Boyle,	Pittston,	M. J. Clemmons,	Murray,	Lehigh Valley
Clinton Falls Coal Co.						
Clinton Falls,	Wayne,			Joseph J. Cleary,	Forest City,	N. Y., O. and W.
Wachna-Taylor Anthracite Coal Co.						
Wachna-Taylor,	Sullivan,	W. J. Schad, Agent,	Mildred,			Lehigh Valley
Elk Brook Coal Co.						
*Elk Brook,	Lackawanna,					

*In course of development for stripping.

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives		
										Pounds of black powder used	Pounds of dynamite used	Pounds of permissible explosives used
Delaware and Hudson Co.												
Clinton,	Lackawanna, Susquehanna, Wayne,	453,698	26,581	3,859	484,138	294	783	2	8	426,800	51,196	477,996
Clinton Washery,		112,707	822		113,529	228						
Total,		566,405	27,403	3,859	597,667		783	2	8	426,800	51,196	477,996
Hillside Coal and Iron Co.												
Forest City,	Susquehanna,	527,694	55,053	10,265	593,012	302	1,217	3	2	491,875	36,100	108,400
Scranton Coal Co.												
Ontario,	Lackawanna,	213,747	42,018	2,885	258,650	222	816		8	128,125	173,425	
Ontario Washery,	Lackawanna,	102,449	22,410	1,955	126,814	220	43					
Total,		316,196	64,428	4,840	385,464		859		8	128,125	173,425	
Lackawanna Coal Co., Ltd.												
Lackawanna,	Lackawanna,	268,844	31,045	13,381	313,270	256	673	2	5	372,800	56,775	
Connell Anthracite Mining Co.												
Connell,	Sullivan,	258,901	36,000	4,596	299,497	266	505	1	8	80,900	37,009	

TABLE 2.—Part 1.—Continued

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives		
										Pounds of black powder used	Pounds of dynamite used	Pounds of permissible explosives used
Mt. Jessup Coal Co., Ltd. Mt. Jessup,	Lackawanna,	190,737	22,355	3,952	217,044	271	719	1	23	136,900	59,368	32,655
Moosic Mountain Coal Co. Moosic Mountain,	Lackawanna,	148,527	22,454	3,599	174,580	219	352	3	7	81,050	126,475	
Northern Anthracite Coal Co. Murray,	Sullivan,	163,803	5,000	3,228	172,031	217	306	1	4	126,000	2,500	
Northwest,	Lackawanna,	62,620	3,792	578	66,990	173	159		2	35,725	7,262	
Rackett Brook Coal Co. Rackett Brook,	Lackawanna,	32,647	245	5,226	38,118	272	183	2	3	81,450	16,520	
Carbondale Coal Mining Co. Boland,	Lackawanna,	19,149	4,380	5,493	29,022	292	71		1	52,200	3,000	500
O'Boyle-Foy Anthracite Coal Co. O'Boyle-Foy,	Sullivan,	18,252	3,150	547	21,949	65	125			20,400	2,500	
Clinton Falls Coal Co. Clinton Falls,	Wayne,	6,994	400	806	8,200	180	40			400	25	

Wachna-Taylor Anthracite Coal Co.															
Wachna-Taylor,	Sullivan,	228	300	20	548	33	20			950	20				
Elk Brook Coal Co.															
Elk Brook,*	Lackawanna,						10		1						
							6,022	15	72						
Grand totals,		2,580,997	276,005	60,390	2,917,392					2,035,575	672,175				619,551

*In course of development for stripping.

TABLE 2.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Names of Operators	County	Power Plant										Pumps			Haulage					Air Compressors	
		Boilers				Engines										Locomotives					
		Cylindrical		Tubular		Steam Engines (All Classes)		Internal Combustion Engines (Gas)		Electric Dynamos (All Classes)		Number	Total capacity in gallons per minute	Pumps Delivering Water to the Surface	Number of horses and mules	Gasoline	Steam	Air	Electric	Number	Total capacity cubic feet per minute
		Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total watts kilo-			Number	Approximate number of gallons per minute						
Delaware and Hudson Co.,	Lackawanna, Susquehanna, Wayne,	----	----	17	1,630	32	1,422	----	----	1	----	5	2,400	5	1,400	80	----	2	----	5	----	----
Hillside Coal and Iron Co.,	Susquehanna,	----	----	29	3,740	40	3,400	----	----	5	1,250	31	13,100	13	4,280	----	----	4	----	24	1	240
Scranton Coal Co.,	Lackawanna,	6	120	14	1,590	43	3,249	----	----	2	115	35	22,831	12	10,951	99	----	4	----	2	----	----
Lackawanna Coal Co., Limited,	Lackawanna,	----	----	11	2,710	21	2,530	----	----	3	460	21	15,750	5	4,800	----	----	2	----	14	----	----
Connell Anthracite Mining Co.,	Sullivan,	----	----	7	1,900	10	1,530	----	----	4	730	8	575	2	800	----	----	----	----	12	----	----
Mt. Jessup Coal Co., Limited,	Lackawanna,	----	----	12	2,940	17	850	----	----	----	----	20	5,000	4	1,600	53	----	3	----	----	2	1,500
Moosic Mountain Coal Co.,	Lackawanna,	----	----	7	600	5	305	----	----	1	1,100	3	500	2	400	46	----	----	----	----	1	----
Northern Anthracite Coal Co.,	Sullivan,	----	----	5	450	5	400	----	----	----	----	3	3,150	3	1,100	43	3	----	----	----	----	----
Temple Coal Co.,	Lackawanna,	----	----	5	920	19	1,550	----	----	1	75	14	2,500	1	150	----	----	3	----	----	2	140
Rackett Brook Coal Co.,	Lackawanna,	1	25	----	----	----	----	----	----	14	560	5	1,000	1	400	12	----	2	----	2	2	50
Carbondale Coal Mining Co.,	Lackawanna,	----	----	6	345	7	255	----	----	----	----	2	240	1	180	8	----	----	----	----	1	20

O'Boyle-Foy Anthracite Coal Co.,	Sullivan,				2	450	9	400	1	30			6	1,200	2	600	14	1									
Clinton Falls Coal Co.,	Wayne,				1	150	1	15																				
Wachna-Taylor Anthracite Coal Co.,	Sullivan,				1	80	1	50					1	200	2													
Totals,		7	145	117	17,505	210	15,956	1	30	31	4,290	154	68,446	53	26,661	355	4	20	---	59	9	1,950						

TABLE 3.—Part 1.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside															Total inside	Outside											Total outside	Grand total inside and outside
		Mine foremen	Assistant mine foremen	Fire bosses	Miners	Miners' laborers	Machine miners	Machine runners and scrapers	Drivers and runners	Motormen and assistants	Doorboys and helpers	Trackmen and bratticemen	Timbermen and rockmen	Pumpmen and pipemen	Electricians and helpers	All other employes		Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Machinists and helpers	Trackmen and helpers	Slate pickers (boys)	Slate pickers (men)	Office employes	All other employes		
Delaware and Hudson Co.,	Lackawanna, Susquehanna, Wayne,	1	4	--	201	217	----	----	60	11	25	11	----	9	1	57	597	----	3	6	31	3	----	----	14	2	127	186	783
Hillside Coal and Iron Co.,	Susquehanna,	3	8	--	429	253	----	----	38	42	16	29	29	8	12	52	919	1	1	26	34	5	4	41	15	3	168	298	1,217
Scranton Coal Co.,	Lackawanna,	1	6	--	220	142	----	----	70	2	4	8	5	7	----	45	510	----	2	17	54	5	5	95	55	3	113	349	859
Lackawanna Coal Co.,	Lackawanna,	2	2	5	199	124	----	----	7	61	8	45	33	11	----	21	518	1	1	17	20	9	7	----	28	4	68	155	673
Connell Anthracite Mining Co.,	Sullivan,	1	1	--	190	59	28	----	----	38	----	11	12	9	2	13	364	----	1	10	14	3	4	22	23	6	58	141	505
Mt. Jessup Coal Co., Limited,	Lackawanna,	2	5	5	131	150	20	27	56	----	2	19	13	9	----	26	465	1	2	28	42	7	3	35	----	3	133	254	719
Moosic Mountain Coal Co.,	Lackawanna,	2	1	--	161	76	----	----	35	----	8	12	3	4	----	3	305	1	1	8	7	2	----	----	----	2	26	47	352
Northern Anthracite Coal Co.,	Sullivan,	1	2	--	75	75	----	----	47	9	5	2	----	1	----	3	220	1	1	5	6	----	----	12	31	3	27	86	306
Temple Coal Co.,	Lackawanna,	2	--	--	38	35	----	----	6	2	1	4	----	2	----	13	103	1	1	5	7	3	2	----	13	2	22	56	159
Rackett Brook Coal Co.,	Lackawanna,	1	1	--	52	57	----	----	6	6	1	4	2	1	1	----	132	1	1	10	5	4	2	----	----	8	20	51	183
Carbondale Coal Mining Co.,	Lackawanna,	1	--	--	22	10	----	1	8	----	----	1	----	1	----	----	44	1	1	3	6	2	2	2	2	2	6	27	71
OBoyle-Foy Anthracite Coal Co.,	Sullivan,	1	--	--	42	10	----	----	8	2	2	3	----	2	----	15	85	1	1	2	5	1	----	10	12	1	7	40	125

| | | |

TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Total
Delaware and Hudson Co.,	Lackawanna, Susquehanna, Wayne,	26	28	24	26	26	25	21	26	22	24	22	24	294
Hillside Coal and Iron Co.,	Susquehanna,	24	24	26	26	27	26	24	27	25	24	24	25	302
Scranton Coal Co.,	Lackawanna,	19	19	15	16	19	19	19	21	19	19	19	18	222
Lackawanna Coal Co., Limited,	Lackawanna,	25	25	27	23	26	25	24	27	14	------	15	25	256
Connell Anthracite Mining Co.,	Sullivan,	24	24	20	26	25	24	12	21	24	24	20	22	266
Mt. Jessup Coal Co., Limited,	Lackawanna,	21	24	26	13	20	24	22	26	21	21	27	26	271
Moosic Mountain Coal Co.,	Lackawanna,	22	21	22	14	11	19	18	21	19	16	18	18	219
Northern Anthracite Coal Co.,	Sullivan,	23	24	20	19	11	15	11	13	19	17	22	23	217
Temple Coal Co.,	Lackawanna,	13	16	14	15	18	17	16	17	12	11	12	12	173
Rackett Brook Coal Co.,	Lackawanna,	25	25	27	18	20	6	25	27	25	25	25	24	272
Carbondale Coal Mining Co.,	Lackawanna,	26	24	26	17	26	24	25	25	25	25	25	24	292
O'Boyle-Foy Anthracite Coal Co.,	Sullivan,	13	13	14	7	6	7	5	------	------	------	------	------	65
Clinton Falls Coal Co.,	Wayne,	------	------	------	------	25	19	24	22	24	18	24	24	180
Wachna-Taylor Anthracite Coal Co.,	Sullivan,	------	------	------	------	------	------	------	------	------	------	9	24	33

TABLE 4.—Fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 4	John Pelik,	American,	Motorman,	22	S.			Clinton,	Lackawanna,	Killed by electric locomotive on gangway.
Feb. 15	Frank Vetosky,	Lithuanian,	Miner,	58	M.	1		Forest City,	Susquehanna,	Killed by fall of roof at face of chamber.
Mar. 9	Stephen Capiak,	Russian,	Footman,	21	S.			Moosic Mountain.	Lackawanna,	Killed by fall of roof at foot of slope.
April 3	Walter Kouisliz,	Polish,	Doortender,	16	S.			Lackawanna,	Lackawanna,	Killed by electric locomotive on gangway.
June 3	Gerolina Fagnan,	Italian,	Miner,	34	M.	1	2	Lackawanna,	Lackawanna,	Killed by explosion of blast at face of chamber.
27	Carmon Ozen,	Italian,	Mason,	57	M.	1		Moosic Mountain.	Lackawanna,	Killed by cars on gangway.
July 11	Joseph Dudash,	Austrian,	Miner,	48	M.	1	2	Forest City,	Susquehanna,	Killed by fall of roof at face of chamber.
31	August Yustafik,	Austrian,	Miner,	45	M.	1	4	Clinton,	Lackawanna,	Killed by fall of roof at face of chamber.
Aug. 22	Stephen Halabuck,	Polish,	Laborer,	38	M.	1		Murray,	Sullivan,	Killed by fall of coal at face of chamber.
Sept. 28	John Cipor,	Polish,	Laborer,	63	M.	1		Connell,	Sullivan,	Killed by fall of coal at face of airway.
Oct. 13	Peter Matta,	Italian,	Miner,	23	S.			Moosic Mountain.	Lackawanna,	Killed by fall of roof at face of chamber.
20	Anthony Gudas,	Lithuanian,	Miner,	28	M.	1		Forest City,	Susquehanna,	Killed by fall of roof on pillar work.
Dec. 4	Michael Olechak,	Slavonian,	Miner,	44	M.	1	3	Mt. Jessup,	Lackawanna,	Killed by fall of roof on pillar work.
5	Constante Devichie,	Italian,	Laborer,	33	M.	1	4	Rackett Brook,	Lackawanna,	Killed by explosion of blast at face of gangway.
	Anthony Sharlota,	Italian,	Miner,	38	M.	1	4			

TABLE 5.—Non-fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 10	Harry Pecotti,	Italian,	Miner,	38	S.	Mt. Jessup,	Lackawanna,	Hand injured by fall of roof at face of chamber.
14	Michael Perri,	Italian,	Laborer,	35	M.	Rackett Brook,	Lackawanna,	Back injured. Struck by a rope. Outside.
15	Thomas M. Bailus,	Welsh,	Headman,	20	S.	Clinton,	Lackawanna,	Finger cut off by cars on slope.
26	Paul Procochak,	Austrian,	Laborer,	34	M.	Mt. Jessup,	Lackawanna,	Finger injured by fall of roof at face of chamber.
	Thomas Cahill,	American,	Miner,	24	M.	Murray,	Sullivan,	Leg fractured by fall of roof in chamber.
27	John Poloncic,	Austrian,	Miner,	28	M.	Clinton,	Lackawanna,	Leg fractured by fall of roof in chamber.
28	William Jones,,	American,	Driver,	18	S.	Clinton,	Lackawanna,	Arm fractured by cars in chamber.
31	Dominick Kaskinski,	Russian,	Miner,	37	M.	Ontario,	Lackawanna,	Thumb cut off by fall of coal in chamber.
Feb. 1	Walter Fernena,	Polish,	Miner,	27	M.	Lackawanna,	Lackawanna,	Rib fractured by fall of roof at face of chamber.
	George Geral,	Russian,	Runner,	21	S.	Ontario,	Lackawanna,	Leg fractured by cars on gangway.
3	Joseph Redball,	American,	Driver,	18	S.	Clinton,	Lackawanna,	Leg fractured by prop falling on him on gangway.
21	Adam Novioskey,	Polish,	Miner,	48	S.	Boland,	Lackawanna,	Face and hands burned by explosion of powder in chamber.
Mar. 14	Floridi Brigani,	Italian,	Laborer,	47	M.	Mt. Jessup,	Lackawanna,	Ribs fractured by fall of roof in chamber.
April 3	Fred Angelo,	Italian,	Laborer,	19	S.	Mt. Jessup,	Lackawanna,	Finger injured by cars on gangway.
7	Martin Masylar,	American,	Machinist,	18	S.	Mt. Jessup,	Lackawanna,	Eye injured by flying nail. Outside.
13	John Grossel,	Austrian,	Laborer,	40	M.	Clinton,	Lackawanna,	Side injured by lifting rock at face of chamber.
17	Edward H. Race,	American,	Tracklayer,	52	M.	Lackawanna,	Lackawanna,	Knee injured by cars on gangway.
25	John Gruzesky,	Polish,	Headman,	20	S.	Ontario,	Lackawanna,	Fingers bruised by cars on slope.
29	Stanley Vagary,	Italian,	Laborer,	33	M.	Ontario,	Lackawanna,	Finger cut off by cars on slope.
May 19	Louie Sererigh,	Russian,	Miner,	25	M.	Ontario,	Lackawanna,	Scalp lacerated by explosion of blast in chamber.
22	Frank Netresky,	Italian,	Miner,	33	M.	Moosic Mountain,	Lackawanna,	Hip fractured by fall of roof at face of chamber.
23	Walter Zabalski,	Polish,	Laborer,	25	M.	Clinton,	Lackawanna,	Finger bruised by car in chamber.
26	Charles Pelton,	American,	Motorman,	18	S.	Connell,	Sullivan,	Foot squeezed between cars on gangway.

May	28	Michael Gillgian,	American,	Tracklayer,	50	M.	Connell,	Sullivan,	Jaw fractured. Struck by a bar. Outside.
June	2	Stanley Clipp,	Polish,	Miner,	50	M.	Lackawanna,	Lackawanna,	Hip bruised by fall of coal at face of chamber.
	3	Felix Goodman,	American,	Brakeman,	19	S.	Connell,	Sullivan,	Ankle injured by cars on gangway.
	6	Mike Granattta,	Russian,	Laborer,	34	M.	Mt. Jessup,	Lackawanna,	Hip injured by cars on gangway.
	10	Michael Burr,	Slavonian,	Laborer,	28	M.	Lackawanna,	Lackawanna,	Thumb lacerated by prop at face of chamber.
	12	Thomas Gerome,	Italian,	Driver,	20	S.	Moosic Mountain,	Lackawanna,	Scrotum injured. Struck by a rail.
	13	Chris Wurtz,	American,	Lineman,	21	S.	Forest City,	Susquehanna,	Head and body injured. Squeezed between cars on gangway.
		Varina Lacelle,	Italian,	Miner,	39	M.	Mt. Jessup,		Arm fractured by fall of roof at face of chamber.
	14	Michael Marconeri,	Italian,	Miner,	26	M.	Mt. Jessup,		Side injured. Struck by a prop in chamber.
	16	Martel Rossi,	Italian,	Miner,	27	M.	Moosic Mountain,		Nose fractured by explosion of blast at face of chamber.
July	7	John Gaughan,	American,	Miner,	36	M.	Mt. Jessup,		Ruptured while pushing car on gangway.
	12	Dan Szegeda,	Austrian,	Carpenter,	42	M.	Mt. Jessup,	Lackawanna,	Knee injured. Struck by timber in breaker. Outside.
	13	John McNally,	American,	Tracklayer,	45	M.	Mt. Jessup,		Rib fractured by cars on gangway.
	15	Edward Barrett,	Irish,	Miner,	45	M.	Moosic Mountain,		Three fingers cut off by car in chamber.
		Edward Barrett, Jr.,	American,	Engineer,	21	S.	Mt. Jessup,		Eye cut by flying iron in breaker. Outside.
	17	Joseph Mazartsky,	Austrian,	Laborer,	41	M.	Northwest,		Arm and rib fractured by fall of coal at pillar work.
	21	William Lathrope,	German,	Brakeman,	24	M.	Lackawanna,		Hip injured by car on gangway.
	25	John Litho,	Slavonian,	Miner,	32	S.	Forest City,	Susquehanna,	Leg fractured by fall of coal at face of chamber.
	26	Gervass Reap,	American,	Carpenter,	19	S.	Mt. Jessup,		Hand lacerated by circular saw. Outside.
	27	Thomas Daly,	English,	Miner,	46	M.	Clinton,	Lackawanna,	Head and back injured by cars in chamber.
	31	George Koshlinick,	American,	Fireman,	18	S.	Ontario,		Fingers bruised by cars. Outside.
Aug.	14	Thomas Sumonick,	Austrian,	Laborer,	22	S.	Clinton,	Lackawanna,	Three fingers bruised while coupling cars on gangway.
	19	Mike Darnishook,	Slavonian,	Tracklayer,	38	M.	Mt. Jessup,		Leg fractured. Struck by rope on slope.
	25	Edward Chapman,	American,	Machinist,	32	M.	Connell,	Sullivan,	Foot crushed by fall of coal at face of chamber.
Sept.	9	Paul Tomascavitts,	Slavonian,	Driver,	17	S.	Moosic Mountain,		Finger cut off by cars on gangway.
	13	Dominick Cocodrilli,	Italian,	Miner,	44	M.	Mt. Jessup,	Lackawanna,	Foot injured by fall of coal at face of chamber.
	18	Aleck McColla,	Polish,	Miner,	37	M.	Mt. Jessup,		Leg injured by cars on gangway.
		Alex Hitchko,	Russian,	Laborer,	56	M.	Elk Brook,		Leg fractured. Struck by a stone that fell from steam shovel. Outside.
Oct.	4	Nick Magerny,	Russian,	Miner,	43	M.	Moosic Mountain,		Leg fractured by explosion of blast at face of chamber.
	5	Lewis Betti,	Italian,	Miner,	26	S.	Moosic Mountain,		Hip injured by fall of roof at face of chamber.
	6	Joe Shaloski,	Polish,	Miner,	28	M.	Ontario,		Arm burned by explosion of dynamite at face of chamber.
	7	John Bauzre,	Lithuanian,	Miner,	42	S.	Connell,	Sullivan,	Leg fractured by explosion of blast at face of chamber.

TABLE 5.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Oct. 10	Thomas Sumcalk,	Austrian,	Miner,	38	M.	Ontario,	Lackawanna,	Back injured by fall of roof on pillar work.
14	Mickael Danish,	Slavonian,	Runner,	30	M.	Mt. Jessup,	Lackawanna,	Hand lacerated. Squeezed between drum and rope. Outside.
17	Peter Chankamella,	Italian,	Runner,	26	S.	Connell,	Sullivan,	Eye injured. Struck by flying piece of coal in chamber.
Nov. 2	Joseph Patonak,	American,	Driver,	18	S.	Mt. Jessup,	Lackawanna,	Toe cut off. Squeezed between sheave and rope. Outside.
	David Haley,	American,	Driver,	30	S.	Murray,	Sullivan,	Arm fractured. Kicked by a mule.
6	Stanley Anjeskie,	Polish,	Miner,	31	M.	Murray,	Sullivan,	Ruptured. He slipped and fell across a prop.
7	Justin Ward,	American,	Engineer,	20	S.	Mt. Jessup,	Lackawanna,	Leg lacerated by cars on slope.
9	John Sperta,	Italian,	Laborer,	30	M.	Rackett Brook,	Lackawanna,	Ankle fractured by fall of roof at face of chamber.
11	Andrew Drop,	Polish,	Laborer,	55	M.	Rackett Brook,	Lackawanna,	Finger bruised by fall of roof at face of chamber.
16	Andrew Sweeney,	American,	Fireman,	24	M.	Mt. Jessup,	Lackawanna,	Face and hands burned. Scalded by steam in boiler house. Outside.
16	Frank Tearney,	American,	Fireman,	35	S.	Mt. Jessup,	Lackawanna,	Face and hands burned. Scalded by steam in boiler house. Outside.
22	John Urbanish,	Slavonian,	Laborer,	50	M.	Connell,	Sullivan,	Leg bruised by cars on gangway.
Dec. 6	Angelo Crotsky,	Italian,	Doortender,	17	S.	Mt. Jessup,	Lackawanna,	Leg fractured by falling on gangway.
8	Frank Calaman,	Italian,	Laborer,	25	S.	Connell,	Sullivan,	Leg crushed by cars on gangway.
9	Stanley Zetuski,	Austrian,	Miner,	38	M.	Northwest,	Lackawanna,	Leg and rib fractured by fall of roof in chamber.
12	Andrew Gardner,	German,	Miner,	56	M.	Murray,	Sullivan,	Rib fractured by prop falling on him.
16	Dominick Brardi,	Italian,	Miner,	31	M.	Mt. Jessup,	Lackawanna,	Chest crushed by fall of roof in chamber.

CONDITION OF COLLIERIES

DELAWARE AND HUDSON COMPANY

Clinton Colliery.—Ventilation, drainage and condition as to safety, good.

HILLSIDE COAL AND IRON COMPANY

Forest City Colliery.—Ventilation, drainage and condition as to safety, good.

SCRANTON COAL COMPANY

Ontario Colliery.—Ventilation, drainage and condition as to safety, good.

LACKAWANNA COAL COMPANY, LIMITED

Lackawanna Colliery.—Ventilation, drainage and condition as to safety, good.

CONNELL ANTHRACITE MINING COMPANY

Connell Colliery.—Ventilation, drainage and condition as to safety, good.

MT. JESSUP COAL COMPANY, LIMITED

Mt. Jessup Colliery.—Ventilation, drainage and condition as to safety, good.

MOOSIC MOUNTAIN COAL COMPANY

Moosic Mountain Colliery.—Ventilation and safety conditions, good. Drainage fair.

NORTHERN ANTHRACITE COAL COMPANY

Murray Colliery.—Ventilation, drainage and condition as to safety, good.

TEMPLE COAL COMPANY

Northwest Colliery.—Ventilation fair. Drainage and condition as to safety, good.

RACKETT BROOK COAL COMPANY

Rackett Brook Colliery.—Ventilation and drainage, fair. Condition as to safety, good.

CARBONDALE COAL MINING COMPANY

Boland Colliery.—Ventilation and drainage, fair. Condition as to safety, good.

O'BOYLE-FOY ANTHRACITE COAL COMPANY

O'Boyle-Foy Colliery.—Ventilation and drainage, fair. Condition as to safety, good.

CLINTON FALLS COAL COMPANY

Clinton Falls Colliery.—Ventilation, drainage and condition as to safety, good.

WACHNA-TAYLOR ANTHRACITE COAL COMPANY

Wachna-Taylor Colliery.—Ventilation and drainage, fair. Condition as to safety, good.

IMPROVEMENTS

DELAWARE AND HUDSON COMPANY

Clinton Colliery.—Installed an 800-gallon triplex pump in the Clifford vein, pumping through a 10-inch bore hole to the surface; also a 10-ton electric locomotive in the same bore. Completed a tunnel 300 feet long, and a second opening 160 feet, from the surface to open the Grassy bed.

The course of Wilson Creek was changed for 1,500 feet to deflect the stream from surface workings.

RACKETT BROOK COAL COMPANY

Rackett Brook Colliery.—Installed electric haulage motor and coal cutting machines.

Outside: Completed repairs to breaker, enlarging it to a capacity of 1,000 tons per day. Completed a new carpenter shop and general office building.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in the Borough Building, Forest City, June 6 and 7. The Board of Examiners was composed of Benjamin Maxey, Mine Inspector; Harry Yewens, Superintendent; David Davis, Miner, and Patrick Cleary, Miner; all of Forest City.

The following persons passed a satisfactory examination and were granted certificates:

MINE FOREMEN

T. Stanley Cartright, Peckville; Joseph J. Cleary, Carbondale.

ASSISTANT MINE FOREMEN

Evan Roberts, Peckville; Joseph M. Anderson, Vandling.

SECOND DISTRICT

LACKAWANNA COUNTY

Carbondale, Pa., February 23, 1917.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor to transmit herewith my report as Inspector of Mines for the Second Anthracite District for the year ending December 31, 1916.

Respectfully submitted,

P. J. MOORE,
Inspector.

SUMMARY OF STATISTICS

Number of collieries,	14
Number of mines,	29
Number of mines in operation,	29
Number of gaseous mines in operation,	3
Number of non-gaseous mines in operation,	26
Number of tons of coal shipped to market,	2,641,458
Number of tons used at mines for steam and heat,	328,593
Number of tons sold to local trade and used by employes,	39,024
Number of tons produced,	3,009,075
Number of tons produced by compressed air machines,	.....
Number of tons produced by electrical machines,	7,320
Number of persons employed inside of mines,	5,466
Number of persons employed outside,	1,833
Number of persons employed inside between 16 and 21 years,	414
Number of persons employed outside between 14 and 21 years,	532
Number of fatal accidents inside,	15
Number of fatal accidents outside,	3
Number of non-fatal accidents inside,	89
Number of non-fatal accidents outside,	28
Number of tons of coal produced per fatal accident inside,	200,605
Number of tons produced per fatal accident inside and outside,	167,171
Number of persons employed per fatal accident inside,	364
Number of persons employed per fatal accident outside,	611
Number of persons employed per fatal accident inside and outside,	405
Number of persons employed per non-fatal accident inside,	61
Number of persons employed per non-fatal accident outside,	65
Number of persons employed per non-fatal accident inside and outside,	62
Number of wives made widows,	12
Number of children made orphans,	20
Number of steam locomotives inside,	.....
Number of steam locomotives outside,	18
Number of compressed air locomotives inside,	.....
Number of compressed air locomotives outside,	.....
Number of electric motors inside,	72
Number of electric motors outside,	.....
Number of gasoline locomotives inside,	1
Number of gasoline locomotives outside,	.....
Number of cylindrical boilers,	21
Number of tubular boilers,	84

Number of steam engines of all classes,	230
Number of internal combustion engines (gas),	.....
Number of electric dynamos,	20
Number of pumps of all classes,	88
Number of pumps delivering water to surface,	47
Number of air compressors,	10
Number of fans in use,	28
Number of new mines opened,	1
Number of old mines abandoned,	.....

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Delaware and Hudson Company, Inside, Hudson Coal Company, Outside,	1,883,921
Price-Pancoast Coal Company,	483,404
Scranton Coal Company,	333,847
Archbald Coal Company,	136,513
Hillside Coal and Iron Company,	82,379
Humbert Coal Company,	45,179
West Mountain Coal Company,	17,073
Tip Top Coal Company,	13,269
Fall Brook Coal Company,	11,690
Maxey Coal Company,	1,800
Total,	3,009,075

Production by Counties

Lackawanna,	3,009,075

TABLE B.—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Total number of employes	Number of employes inside per fatal accident	Number of employes outside per fatal accident	Number of employes inside per non-fatal accident	Number of employes outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Delaware and Hudson Co., Inside,	6	3	9	54	19	73	313,987	34,888	3,338	1,122	4,460	556	374	61	59
Hudson Coal Co., Outside,															
Price-Pancoast Coal Co.,	2	------	2	10	3	13	241,702	48,340	1,033	203	1,236	517	------	103	68
Scranton Coal Co.,	5	------	5	21	4	25	66,769	15,897	650	273	923	130	------	31	68
Archbald Coal Co.,	1	------	1	------	------	------	136,513	------	161	75	236	161	------	------	------
Hillside Coal and Iron Co.,	------	------	------	1	------	1	------	82,379	133	54	187	------	------	133	------
Humbert Coal Co.,	------	------	------	1	1	2	------	45,179	68	50	118	------	------	68	50
West Mountain Coal Co.,	------	------	------	------	1	1	------	------	33	19	52	------	------	------	19
Tip Top Coal Co.,	1	------	1	1	------	1	13,269	13,269	9	18	27	9	------	9	------
Fall Brook Coal Co.,	------	------	------	1	------	1	------	11,690	20	6	26	------	------	20	------
Miscellaneous Companies,	------	------	------	------	------	------	------	------	21	13	34	------	------	------	------
Totals and averages,	15	3	18	89	28	117	200,605	33,810	5,466	1,833	7,299	364	611	61	65

TABLE C.—Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,	----	1	----	1	----	----	----	----	----	----			2	13.33
Falls of roof,	----	----	----	----	2	1	----	----	1	1			5	33.33
Explosions of powder and dynamite,	1	----	----	----	----	----	----	3	----	----	----	----	4	26.67
Blasts, premature and otherwise,	----	----	1	----	----	1	----	----	----	1	----	----	3	20.00
Ruptured while lifting,	----	----	----	----	----	1	----	----	----	----	----	----	1	6.67
Totals,	1	3	1	1	2	3	----	3	1	2	----	----	15	100.00
Outside														
Machinery,	----	1	1	----	----	----	----	----	----	----	----	----	2	66.67
Suffocation in chutes, etc.,	----	----	----	----	----	1	----	----	----	----	----	----	1	33.33
Totals,	----	1	1	----	----	1	----	----	----	----	----	----	3	100.00
Grand totals,	1	2	2	1	2	4	----	3	1	2	----	----	18	----

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,	----	1	----	----	----	1	1	1	----	----	----	1	5	5.62
Falls of roof,	2	2	----	3	5	3	1	4	1	----	5	----	26	29.21
Mine cars,	2	2	1	3	2	1	1	----	1	5	----	2	20	22.47
Explosions of gas,	----	----	----	----	----	----	----	----	----	1	----	----	1	1.13
Explosions of powder and dynamite,	----	----	1	----	----	----	1	----	----	1	----	----	3	3.37
Blasts, premature and otherwise,	----	----	2	1	1	1	----	2	1	----	----	----	8	8.99
Mules,	----	----	1	2	----	1	----	1	----	----	----	----	5	5.61
Struck by piece of rock,	1	1	----	----	----	----	----	----	----	1	----	----	3	3.37
By falling,	----	1	----	----	----	----	----	----	----	----	----	----	1	1.13
Struck by block,	----	1	----	----	----	----	----	----	----	----	----	----	1	1.13
Struck by needle,	----	----	1	----	----	----	----	----	----	----	----	----	1	1.13
Struck by piece of coal,	----	----	----	----	----	1	----	----	1	----	1	1	4	4.50
Struck by timber,	----	----	----	----	----	1	1	----	1	----	----	----	3	3.37
Struck by rope,	----	----	----	----	----	----	1	----	----	1	----	----	2	2.25
Struck by drag,	----	----	----	----	----	----	----	----	1	----	----	----	1	1.12
Struck by pick,	----	----	----	----	----	----	----	----	----	----	1	----	1	1.12
Struck by wedge,	----	----	----	----	----	----	----	----	----	----	1	----	1	1.12
Strained by lifting,	----	----	----	1	----	----	----	----	----	----	----	----	1	1.12
Clothing caught fire,	----	----	----	1	----	----	----	----	----	----	----	----	1	1.12
Splinter ran in hand,	----	----	----	----	----	----	----	----	----	1	----	----	1	1.12
Totals,	5	8	6	11	8	9	6	8	6	10	8	4	89	100.00
Outside														
Cars,	1	----	----	----	2	1	1	1	----	----	1	----	8	28.57
Machinery,	----	2	----	----	1	1	----	----	----	----	1	1	6	21.43
Struck by timber,	1	----	----	----	----	----	----	----	----	----	1	----	2	7.15
Struck by wrench,	----	----	----	1	----	----	----	----	----	----	----	----	1	3.57
Struck by piece of iron,	----	----	----	----	1	----	----	----	----	----	----	----	1	3.57
Mules,	----	----	----	1	----	----	----	----	----	----	----	----	1	3.57
Scalded by steam,	----	1	----	----	----	----	1	----	----	----	----	----	2	7.15
Scalded by hot water,	----	----	----	----	2	----	----	----	----	----	----	----	2	7.14
Burned by hot coals,	----	----	----	----	1	----	----	----	----	----	----	----	1	3.57
By falling,	2	----	----	----	----	----	----	----	----	----	----	----	2	7.14
Struck by latch,	----	----	----	----	1	----	----	----	----	----	----	----	1	3.57
Hand punctured by nail,	----	----	----	----	1	----	----	----	----	----	----	----	1	3.57
Totals,	4	3	----	2	10	2	2	1	----	----	3	1	28	100.00
Grand totals,	9	11	6	13	18	11	8	9	6	10	11	5	117	----

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,	1	1	1	1					1	2			7
Miners' laborers,					2	2		3					7
Drivers and runners,						1							1
Totals,	1	1	1	1	2	3		3	1	2			15
Outside													
Blacksmiths and carpenters,		1											1
Slatepickers (boys),			1										1
Laborers,						1							1
Totals,		1	1			1							3
Grand totals,	1	2	2	1	2	4		3	1	2			18

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Trip riders,												1	1
Masons,											1		1
Footmen,									1				1
Miners,		3	1	5	4	6	1	4	1	4	2	1	32
Miners' laborers,	3	3	3	3	3	2	4	3	2	2	4	1	33
Drivers and runners,	1	1	2	2	1	1		1		1		1	11
Doorboys and helpers,	1	1							2				4
Pumpmen,				1									1
Brakemen,							1			1			2
Tracklayers,										2	1		3
Totals,	5	8	6	11	8	9	6	8	6	10	8	4	89
Outside													
Ashmen,					1		1						2
Machinists,						1							1
Pumpmen,					1								1
Blacksmiths and carpenters,					1								1
Engineers and firemen,					2						1	1	4
Slatepickers (boys),		1					1						2
Slatepickers (men),		1											1
Brakemen,					1								1
Drivers and runners,				1		1					1		3
Laborers,	4	1		1	4			1			1		12
Totals,	4	3		2	10	2	2	1			3	1	28
Grand totals,	9	11	6	13	18	11	8	9	6	10	11	5	117

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,		2	1			2							5
Welsh,										1			1
Polish,			1		2	1		1	1				6
Italian,				1				2		1			4
Austrian,	1												1
Russian,						1							1
Totals,	1	2	2	1	2	4		3	1	2			18

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	4	3	2	2	6	5	2	2	1	8	5	5	45
English,	1	1											2
Welsh,				1									1
Irish,						1							1
Polish,		2	2	4	3	2	2	2	4				21
Hungarian,									1		1		2
Italian,		3	1	4	7	1	1	3		1	2		23
Slavonian,						1	1						2
Lithuanian,	1							1		1	2		5
Austrian,	1	1	1	1		1							5
Russian,	1	1			2		2	1			1		8
Greek,	1												1
Swedish,				1									1
Totals,	9	11	6	13	18	11	8	9	6	10	11	5	117

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and Types of Safety Lamps Used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Delaware and Hudson Co., Inside Hudson Coal Co., Outside Powderly Colliery:										
Powderly No. 1,	Lackawanna,	*C—Top and Bottom	95		700	8		Non-gas.,		
Powderly No. 1 Tunnel		C—Top and Bottom	62					Non-gas.,		
Carbondale No. 1,†		C—Bottom,	48				Drift,	Non-gas.,		
Carbondale No. 2,		C—Bottom,	48		625	7		Non-gas.,		
Carbondale, Norton's,		C—Bottom,	95		600	5		Non-gas.,		
Coal Brook Colliery:										
Coal Brook Tunnel Nos. 17 and 20,	Lackawanna,	E—Grassy,	70					Non-gas.,		
Coal Brook Tunnel Nos. 14 and 15,		E—Grassy,	70					Non-gas.,		
Coal Brook Tunnel No. 12,		E—Top,	51					Non-gas.,		
Coal Brook Tunnel No. 7,		E—Top,	51					Non-gas.,		
Coal Brook Tunnel Nos. 6 and 21,		E—Top and Bottom	60					Non-gas.,		
Coal Brook Tunnel No. 22,		B—Third,	42					Non-gas.,		
Jermyn Colliery:										
Jermyn,	Lackawanna,	C—Clark,	84					Non-gas.,		
Jermyn,		E—Grassy,	71		112			Non-gas.,		
Jermyn,		E—Grassy,	71					Non-gas.,		

†Carbondale No. 1 is known as Powderly No. 1.
*C—Top and Bottom Vein is the Clark Vein.

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and Types of Safety Lamps Used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Gravity Slope Colliery:										
Gravity Tunnel No. 11,	Lackawanna,	B—Dunmore Nos. 2 and 3	42					Non-gas.,		
Gravity No. 3,		C—Archbald,*	87		2,300	5		Gaseous,		
Gravity No. 6 Tunnel,		C—Archbald,	52					Non-gas.,		
Price-Pancoast Coal Co.										
Pancoast Colliery:										
Pancoast,	Lackawanna,	F—Diamond,	96					Gaseous,	68	
		Top Split of 14 foot or E	60							
		Bottom Split of 14 foot or E	36							
		D—New County,	60	595						
		C—Clark,	52							
		B—Dunmore No. 2,	36							
		B—Dunmore No. 3,	34							
		B—Dunmore No. 4,	44							
Scranton Coal Co.										
Raymond Colliery:										
Raymond,	Lackawanna,	C—Clark,	108					Non-gas.,		
		F—Diamond,	42	235	400	14				
		E—Grassy,	48							
		F—Dunmore No. 2,	36							
Riverside Colliery:										
Riverside,	Lackawanna,	Top County,	32					Gaseous,	10	
		D—New County,	36	276						
		C—Clark,	58							

*Archbald Vein is Clark Vein.

Archbald Coal Co.										
Tappans Colliery:										
Tappans,	Lackawanna,	B—Dunmore No. 1.	25		1,500	6		Non-gas.,		
		B—Dunmore No. 2,	22							
		D—New County,	36		2,000	3.5		Non-gas.,		
Hillside Coal and Iron Co.										
Erie Colliery:										
Erie,	Lackawanna,	D—New County,	29	178.5				Non-gas.,		
		C—Clark,	120							
Humbert Coal Co.										
Sunnyside Colliery:										
Sunnyside,	Lackawanna,	*B—Dunmore No.1,	30				Drift,	Non-gas.,		
		B—Dunmore No.2,	18				Drift,	Non-gas.,		
		*B—Dunmore No.3,	28				Drift,	Non gas.,		
		C—Clark,	60				Drift,	Non-gas.,		
West Mountain Coal Co.										
West Mountain Colliery:										
West Mountain,	Lackawanna,	C—Clark,	84							
		B—Dunmore No. 1,	30				Drift,	Non-gas.,		
		B—Dunmore No. 2,	64							
Tip Top Coal Co.										
Tip Top Colliery:										
Tip Top,	Lackawanna,	*Carbondale Top and D. Bottom coal	144							
		B—Dunmore No. 1,	54	51	600	12		Non-gas.,		
Fall Brook Coal Co.										
Murrins Colliery:										
Murrins,	Lackawanna,	C—Clark,	72				Drift,	Non-gas.,		
Maxey Coal Co.										
Tipperary Colliery:										
Tipperary,	Lackawanna,	E—Grassy Island,	48				Drift,	Non-gas.,		

*Idle.

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Delaware and Hudson Co., Inside Hudson Coal Co., Outside Powderly Colliery:												
Powderly No. 1,	Lackawanna,	*C—Top and Bottom	Guibal,	17	140	1	Steam,	51,000	50,000	55,000	3	200
Powderly No. 1 Tunnel		C—Top and Bottom	----------	----------	----------	----------	Natural,	65,000	62,000	70,000	3	210
Carbondale No. 1,†		C—Bottom,	Guibal,	10	252	1.2	Electricity,	62,000	55,000	65,000	2	150
Carbondale No. 2,		C—Bottom,	Guibal,	10	252	1.2	Steam,	25,000	20,000	30,000	2	100
Carbondale, Norton's,		C—Bottom,	Buffalo,	10	252	1.2	Electricity,	30,000	18,000	32,000	1	64
Coal Brook Colliery:												
Coal Brook Tunnel Nos. 17 and 20,		E—Grassy,	Guibal,	17	80	1.7	Electricity,	70,000	60,000	75,000	4	250
Coal Brook Tunnel Nos. 14 and 15,		E—Grassy,	Guibal,	17	75	1.7	Electricity,	75,000	65,000	78,000	4	260
Coal Brook Tunnel No. 12,		E—Top,	Guibal,	12	85	1.8	Electricity,	60,000	50,000	65,000	3	200
Coal Brook Tunnel No. 7,		E—Top,	Guibal,	20	100	.4	Electricity,	45,000	40,000	48,000	2	180
Coal Brook Tunnel Nos. 6 and 21,		E—Top and Bottom	Guibal,	20	94	2.1	Electricity,	75,000	70,000	78,000	3	200
Coal Brook Tunnel No. 22,		B—Third,	Guibal	10	94	2.1	Electricity,	20,000	18,000	25,000	1	74
Jermyn Colliery:												
Jermyn,	Lackawanna,	C—Clark,	Guibal,	20	90	1.25	Steam,	150,000	148,000	155,000	9	645
Jermyn,		E—Grassy,	Guibal,	17	93	1.75	Steam,					
Jermyn,		E—Grassy,	Buffalo,	10	93	1.75	Electricity,					

†Carbondale No. 1 is known as Powderly No. 1.
*C—Top and Bottom Vein is the Clark Vein.

Gravity Slope Colliery:												
Gravity Tunnel No. 11,	Lackawanna,	B—Dunmore Nos. 2 and 3	Guibal,	17	95	1.6	Steam,	55,000	50,000	58,000	4	277
Gravity No. 3,		C—Archbald,*	Guibal,	20	88	1.2	Steam,	50,000	48,000	52,000	4	258
Gravity No. 6 Tunnel,		C—Archbald,	Buffalo,	10	154	.9	Electricity,	45,000	42,000	48,000	4	228
Price-Pancoast Coal Co.												
Pancoast Colliery:												
Pancoast,	Lackawanna,	F—Diamond, Top Split of 14 foot or E Bottom Split of 14 foot or E	Jeffrey,	20	100	4.0	Steam,	345,847	434,910	285,690	24	1,033
		D—New County,	Guibal,	20	80	1.2	Ste m,					
		C—Clark,	Guibal,	20	80	2.5	Steam,					
		B—Dunmore No. 2,										
		B—Dunmore No. 3,										
		B—Dunmore No. 4,										
Scranton Coal Co.												
Raymond Colliery:												
Raymond,	Lackawanna,	C—Clark,	Guibal,	14	90	.1	Steam,	25,000	26,000	20,000	1	515
		F—Diamond,	Guibal,	14	100	1.2	Steam,	110,000	115,000	88,000	5	
		E—Grassy,										
		F—Dunmore No. 2,	Guibal,	10	120	1	Steam,	37,000	39,000	27,000	2	
Riverside Colliery:												
Riverside,	Lackawanna,	Top County,	Guibal,	20	75	.4	Steam,	81,300	82,200	74,600	4	135
		D—New County,										
		C—Clark,										
Archbald Coal Co.												
Tappans Colliery:												
Tappans,	Lackawanna,	B—Dunmore No. 1,	Vulcan,	16	100	.75	Steam,	90,000	115,000	7,000	7	66
		B—Dunmore No. 2,										
		D—New County,	Stine,	6	1,150	.5	Electricity,	50,000	55,000	6,000	3	95
Hillside Coal and Iron Co.												
Erie Colliery:												
Erie,	Lackawanna,	D—New County,	Guibal,	18	60	1	Steam,	74,736	56,494	83,736	4	133
		C—Clark,										
Humbert Coal Co.												
Sunnyside Colliery:												
Sunnyside,	Lackawanna,	†B—Dunmore No.1,					Natural,					
		B—Dunmore No.2,	Guibal,	8	120	.75	Steam,	11,500	123,000	103,000	1	68
		†B—Dunmore No.3,										
		C—Clark,					Natural,	9,000	9,700	8,700	1	

*Archbald Vein is Clark Vein.
†Idle.

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
West Mountain Coal Co. West Mountain Colliery: West Mountain,	Lackawanna,	C—Clark, B—Dunmore No. 1, B—Dunmore No. 2,	Guibal,	12	90	.7	Steam,	42,000	45,000	42,000	1	33
Tip Top Coal Co. Tip Top Colliery: Tip Top,	Lackawanna,	*Carbondale Top and D. Bottom coal B—Dunmore No. 1,	Buffalo,	5	280	.5	Steam,	12,000	13,000	8,000	2	9
Fall Brook Coal Co. Murrins Colliery: Murrins,	Lackawanna,	C—Clark,					Natural,	8,000	9,000	6,000	1	20
Maxey Coal Co. Tipperary Colliery: Tipperary,	Lackawanna,	E—Grassy Island,					Electricity,	5,000	5,500	4,000	1	21

*Idle.

TABLE J.—Operators and mines, name of coal bed, kind of openings, mining machines used and approximate number of tons produced by machines

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of opening	Gaseous or non-gaseous	Mining Machines		Approximate number of tons produced by machines
						Electric	Compressed air	
Delaware and Hudson Co., Inside								
Hudson Coal Co., Outside								
Coal Brook	Lackawanna,	B. or Top Split Dunmore,	30	Tunnel,	Non-gas.,	1		6,636
Jermyn	Lackawanna,	C. or Clark,	84	Shaft,	Non-gas,	1		684
Totals,						2		7,320

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	General Superintendent	Post Office	Superintendent	Post Office	Railroad to Mine
Delaware and Hudson Co., Inside Hudson Coal Co., Outside Powderly, Coal Brook, Jermyn, Gravity Slope,	Lackawanna,	C. Evans, Jr.,	Scranton,	William Davidson, C. H. Constantine, C. H. Constantine, R. C. Welliver,	Carbondale, Carbondale, Carbondale, Archbald,	Delaware and Hudson
Jermyn Washery,	Lackawanna,	Chas. Dorrance, Jr.,	Scranton,	C. H. Constantine,	Carbondale,	
Price-Pancoast Coal Co. Pancoast,	Lackawanna,	John R. Bryden,	Scranton,	J. V. Birtley,	Throop,	N. Y. O. and W. Delaware and Hudson D. L. and W.
Scranton Coal Co. Raymond, Riverside,	Lackawanna,	Daniel Young, Sr.,	Scranton,	J. J. Aitken,	Priceburg,	N. Y. O. and W.
Archbald Coal Co. Tappans,	Lackawanna,			Richard Howells,	Scranton,	Delaware and Hudson
Hillside Coal and Iron Co. Erie,	Lackawanna,	Joseph P. Jennings,	Scranton,	Arthur Wrightson,	Forest City,	Erie
Humbert Coal Co. Sunnyside,	Lackawanna,	W. C. Humbert,	Jessup,	M. J. Loftus,	Jessup,	Erie
West Mountain Coal Co. West Mountain,	Lackawanna,	John A. Komara,	Jermyn,	Thomas Kennedy,	Jermyn,	N. Y. O. and W.
Tip Top Coal Co. Tip Top,	Lackawanna,	James Kilker,	Carbondale,	James Kilker,	Carbondale,	O. and W.
Fall Brook Coal Co. Murrins,	Lackawanna,	Frank Murrin,	Carbondale,	Frank Murrin,	Carbondale,	N. Y. O. and W.
Maxey Coal Co. Tipperary,	Lackawanna,	George E. Maxey,	Archbald,	H. Schwarztrauber,	Archbald,	N. Y. O. and W.

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives		
										Pounds of black powder used	Pounds of dynamite used	Pounds of permissible explosives used
Delaware and Hudson Co., Inside												
Hudson Coal Co., Outside												
Powderly,	Lackawanna,	526,411	42,488	----------	568,899	302	1,063	2	19	143,025	56,698	----------
Coal Brook,		390,502	26,432	----------	416,934	301	1,493	2	24	519,150	50,816	----------
Jermyn,		378,387	13,036	7,014	398,437	293	796	3	10	312,000	47,420	----------
Gravity Slope,		323,072	28,594	5,415	357,081	271	1,049	2	20	270,750	114,758	----------
		1,618,372	110,550	12,429	1,741,351	------	4,401	9	73	1,244,925	269,692	----------
Jermyn Washery,		73,355	69,215	----------	142,570	245	59	----	----	----------	----------	----------
Totals,		1,691,727	179,765	12,429	1,883,921	------	4,460	9	73	1,244,925	269,692	----------
Price-Pancoast Coal Co.												
Pancoast,	Lackawanna,	422,402	56,405	4,597	483,404	261	1,236	2	13	618,400	13,475	----------
Scranton Coal Co.												
Raymond,	Lackawanna,	228,407	28,198	1,965	258,570	223	716	3	22	155,625	178,775	----------
Riverside,	Lackawanna,	40,426	34,226	625	75,277	205	207	2	3	42,500	28,200	----------
Totals,		268,833	62,424	2,590	333,847	------	923	5	25	198,125	206,975	----------
Archbald Coal Co.												
Tappans,	Lackawanna,	127,149	8,346	1,018	136,513	277	236	1	----	87,500	90,940	----------

TABLE 2.—Part 1.—Continued

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives		
										Pounds of black powder used	Pounds of dynamite used	Pounds of permissible explosives used
Hillside Coal and Iron Co. Erie,	Lackawanna,	69,027	12,564	788	82,379	223	187	----	1	100,625	----------	6,825
Humbert Coal Co. Sunnyside,	Lackawanna,	38,627	6,200	352	45,179	165	118	----	2	45,500	6,500	----------
West Mountain Coal Co. West Mountain,	Lackawanna,	12,388	1,460	3,225	17,073	215	52	----	1	10,625	1,200	950
Tip Top Coal Co. Tip Top,	Lackawanna,	7,945	929	4,395	13,269	291	27	1	1	18,250	----------	----------
Fall Brook Coal Co. Murrins,	Lackawanna,	3,210	500	7,980	11,690	244	26	----	1	7,500	1,500	----------
Maxey Coal Co. Tipperary,	Lackawanna,	150	----------	1,650	1,800	212	34	----	----	5,000	500	----------
Grand totals,		2,641,458	328,593	39,024	3,009,075	------	7,299	18	117	2,336,450	590,782	7,775

TABLE 2.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Names of Operators	County	Power Plant										Pumps				Haulage					Air Compressors	
		Boilers				Engines										Number of horses and mules	Locomotives					
		Cylindrical		Tubular		Steam Engines (All Classes)		Internal Combustion Engines (Gas)		Electric Dynamos (All Classes)		Number	Total capacity in gallons per minute	Pumps Delivering Water to the Surface			Gasoline	Steam	Air	Electric	Number	Total capacity in cubic feet per minute
		Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total kilowatts			Number	Approximate number of gallons per minute							
Delaware and Hudson Co., Inside,																						
Hudson Coal Co., Outside,		18	486	41	8,823	128	12,658	----	----	15	----	29	56,300	29	19,546	283	----	11	----	65	1	----
Price Pancoast Coal Co.,		2	500	6	1,800	21	1,573	----	----	2	54	12	4,000	3	1,200	115	----	----	----	----	2	800
Scranton Coal Co.,		----	----	17	2,215	34	2,880	----	----	2	143	29	10,687	11	5,299	----	----	3	----	2	4	1,901
Archbald Coal Co.,		----	----	5	700	13	651	----	----	----	----	7	1,725	1	800	27	1	2	----	----	2	1,365
Hillside Coal and Iron Co.,	Lackawanna,	----	----	8	1,200	22	1,180	----	----	1	150	6	2,512	2	1,560	15	----	----	----	5	1	260
Humbert Coal Co.,		----	----	3	240	6	185	----	----	----	----	3	800	----	----	13	----	1	----	----	----	----
West Mountain Coal Co.,		----	----	2	300	2	145	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tip Top Coal Co.,		1	100	1	150	3	115	----	----	----	----	2	400	1	150	----	----	----	----	----	----	----
Fall Brook Coal Co.,		----	----	1	150	1	85	----	----	----	----	----	----	----	----	4	----	1	----	----	----	----
Maxey Coal Co.,		----	----	----	----	----	----	----	----	----	----	----	----	----	----	3	----	----	----	----	----	----
Totals,		21	1,086	84	15,578	230	19,472	----	----	20	347	88	76,424	47	28,555	460	1	18	----	72	10	4,326

TABLE 3.—Part 1.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside																Total inside	Outside										Total outside	Grand total inside and outside
		Mine foremen	Assistant mine foremen	Fire bosses	Miners	Miners' laborers	Machine miners	Machine runners and scrapers	Drivers and runners	Motormen and assistants	Doorboys and helpers	Trackmen and brattiemen	Timbermen and rockmen	Pumpmen and pipemen	Electricians and helpers	All other employes		Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Machinists and helpers	Trackmen and helpers	Slate pickers (boys)	Slate pickers (men)	Office employes	All other employes		
Delaware and Hudson Co., Inside,	Lackawanna,	5	17	----	1,042	1,279	1	5	291	156	121	59	18	18	5	321	3,338	----	15	42	116	15	10	64	186	10	664	1,122	4,460
Hudson Coal Co., Outside,																													
Price-Pancoast Coal Co.,		3	1	10	290	263	----	----	156	----	66	14	9	10	2	209	1,033	1	1	6	24	4	----	28	25	5	109	203	1,236
Scranton Coal Co.,		2	2	----	256	186	----	----	76	4	7	14	----	10	----	93	650	----	2	16	41	4	9	83	24	3	91	273	923
Archbald Coal Co.,		1	2	----	80	30	----	----	31	----	3	7	4	1	----	2	161	1	1	7	11	2	3	10	4	1	35	75	236
Hillside Coal and Iron Co.,		1	1	----	60	40	----	----	6	6	2	4	2	1	2	8	133	----	1	5	7	3	----	15	6	1	16	54	187
Humbert Coal Co.,		----	----	----	30	20	----	----	8	----	----	3	4	----	----	3	68	1	----	2	5	2	2	18	8	1	11	50	118
West Mountain Coal Co.,		1	----	----	15	10	----	----	7	----	----	----	----	----	----	----	33	1	1	2	3	1	----	2	----	1	8	19	52
Tip Top Coal Co.,		1	----	----	4	4	----	----	----	----	----	----	----	----	----	----	9	1	1	----	7	----	----	1	----	1	7	18	27
Fall Brook Coal Co.,		1	----	----	5	10	----	----	2	----	----	1	1	----	----	----	20	----	----	----	2	----	----	1	2	1	----	6	26
Maxey Coal Co.,		1	----	----	11	5	----	----	3	----	----	1	----	----	----	----	21	1	1	1	1	1	----	7	----	1	----	13	34
Totals,	----------	16	23	10	1,793	1,847	1	5	580	166	199	103	38	40	9	636	5,466	6	23	81	217	32	24	229	255	25	941	1,833	7,299

TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Total
Delaware and Hudson Co., Inside, Hudson Coal Co., Outside,	Lackawanna,	26	26	24	25	26	23	24	23	22	24	25	24	292
Price-Pancoast Coal Co.,	Lackawanna,	22	25	25	21	25	23	23	25	26	3	22	21	261
Scranton Coal Co.,	Lackawanna,	19	19	16	17	17	18	18	19	18	18	17	18	214
Archbald Coal Co.,	Lackawanna,	25	24	23	22	25	22	20	25	24	23	22	22	277
Hillside Coal and Iron Co.,	Lackawanna,	18	19	19	17	19	18	18	20	19	20	18	18	223
Humbert Coal Co.,	Lackawanna,	12	14	16	7	11	10	14	14	15	18	16	18	165
West Mountain Coal Co.,	Lackawanna,	22	21	20	18	16	12	11	13	15	20	23	24	215
Tip Top Coal Co.,	Lackawanna,	23	22	25	25	26	26	25	22	26	26	25	20	291
Fall Brook Coal Co.,	Lackawanna,	19	22	25	20	18	14	16	19	21	23	24	23	244
Maxey Coal Co.,	Lackawanna,	20	20	22	21	23			16	24	25	22	19	212

TABLE 4.—Fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 18	Andrew Bricko,	Austrian,	Miner,	42	M.	1	2	Pancoast,		Instantly killed by explosion of giant powder while fastening a cap to a stick of giant powder.
Feb. 3	Jerome P. Wickizer,	American,	Miner,	35	M.	1		Pancoast,		Fatally injured. While drilling a hole at face, some top coal fell from a slip.
4	Richard Bowman,	American,	Blacksmith,	35	M.	1	2	Gravity Slope,		Fatally injured. He put his foot on spoke of engine wheel and turned on steam at the same time, and his foot was caught in wheel, pulling him around shaft of engine. Outside.
Mar. 3	Andrew Krochta,	American,	Slatepicker,	18	S.			Jermyn,		Fatally injured. While watching fuel conveyor line, he was caught in some manner unknown. Died March 12 in hospital. Outside.
18	Jacob Lynach,	Polish,	Miner,	50	M.	1	4	Tip Top,		Fatally injured. Struck by flying coals from blast. While he was tamping a charge of blasting powder in a hole at face of chamber, the charge exploded.
April 8	Peter Brunamunty,	Italian,	Miner,	43	M.	1		Raymond,	Lackawanna,	Instantly killed by fall of coal in face of working place. The bottom coal had been taken out about 3 feet.
May 2	Wadock Zukowski,	Polish,	Laborer,	27	S.			Jermyn,		Killed by fall of roof while moving rock back on the gob in face of chamber.
23	John Wydosh,	Polish,	Laborer,	48	S.			Raymond,		Fatally injured by fall of roof at face of chamber.
June 6	Stanley Precoskie,	Russian,	Laborer,	25	M.	1		Powderly,		Fatally injured by fall of roof at face of pillar.
10	Gerald Addley,	American,	Laborer,	17	S.			Powderly,		Fatally injured. He was found dead in culm chute in breaker, where he had fallen. Outside.
26	Joseph Evans,	American,	Driver,	20	S.			Coal Brook,		Fatally injured. While lifting empty car to place it on track on heading road, he ruptured himself. Later he was operated upon, and died from pneumonia.

June	28	Haronin Charuzy,	Polish,	Laborer,	43	M.	1		Gravity Slope,	Lackawanna,	Fatally injured by flying pieces of coal from a shot at face of chamber.
Aug.	3	Ottilo Palango,	Italian,	Laborer,	23	S.			Riverside,		Instantly killed by explosion of dynamite while at face of chamber. He and his miner were tamping a hole.
		Antonio Felpucia,	Italian,	Laborer,	26	M	1	1	Riverside,		Instantly killed by explosion of dynamite at face while he and his miner were tamping a hole.
	8	John Culack,	Polish,	Laborer,	50	M.	1	4	Jermyn,		Fatally injured by explosion of dynamite at face of chamber while he and his miner were charging a hole.
Sept.	14	Felix Puchofsky,	Polish,	Miner,	41	M.	1	5	Raymond,		Fatally injured by fall of roof rock at face of road.
Oct.	2	Dominick Areechi,	Italian,	Miner,	24	M.	1		Tappans,		Fatally injured by fall of roof at face of pillar.
	24	Evan Edwards,	Welsh,	Miner,	34	M.	1	2	Coal Brook,		Fatally injured by blast at face of pillar.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 6	Adam Lisofsky,	Lithuanian,	Laborer,	29	M.	Coal Brook,		Arm fractured by fall of roof at face of chamber while moving back rock.
7	Samuel Waters,	English,	Laborer,	60	M.	Jermyn,		Nose fractured and head injured. Struck by prop thrown from mine car. Outside.
13	Leo Roche,	American,	Driver,	19	S.	Coal Brook,		Three fingers crushed in throwing latch while cars were passing on heading road.
14	Andrew Yotsenick,	Russian,	Doorman,	57	M.	Coal Brook,		Body and legs bruised. Struck by door. A loaded car struck his door just as he was about to open it.
15	George Krothko,	Greek,	Laborer,	20	S.	Sunnyside,		Small bone in leg fractured by turning his ankle when he jumped off mine car. Outside
20	Emmett Cox,	American,	Laborer,	35	S.	Powderly,		Eye ball ruptured. Struck by a piece of rock while breaking rock with hammer.
26	James Necomb,	American,	Laborer,	47	M.	Coal Brook,	Lackawanna,	Foot injured by fall of rock from roof at face of chamber while loading car.
	Daniel Rolitsky,	American,	Laborer,	17	S.	Powderly,		Arm dislocated at elbow. He tripped and fell while running to stop the conveyor line engine. Outside.
29	John Ritzoo,	Austrian,	Laborer,	39	M.	Gravity Slope,		Arm cut and bruised. Caught between bumpers of two culm cars. Outside.
Feb. 1	John Leverton,	English,	Miner,	42	M.	Coal Brook,		Legs badly injured by fall of coal at face of chamber while barring a piece of coal.
	John Ollekavage,	Russian,	Slatepicker,	17	S.	Raymond,		Wrist cut. He climbed up a ladder while breaker was waiting for coal and was caught by a belt in motion. Outside.
10	John Cohnnbenia,	Italian,	Miner,	42	M.	Raymond,		Back sprained. He slipped on bottom rock in chamber.
12	Anthony Kotch,	Italian,	Laborer,	49	M.	Gravity Slope,		End of finger crushed. While putting coal on car near face of chamber, a piece of rock slipped and caught his finger.

Feb.	14	Gerald Mullen,	American,	Laborer,	21	S.	Gravity Slope,			Face and eyes scalded. While putting a plug in the smoke box end the steam and water blew out. Outside.
	16	Amber Perri,	American,	Picker,	16	S.	Coal Brook,			Arm fractured. His glove caught on end of picker shaft and arm was pulled around shaft. Outside.
	19	Alexander Pencosky,	Polish,	Miner,	40	M.	Jermyn,			Big toe slightly bruised. While helping to put down pry to raise car in chamber, the blocking slipped and caught his foot.
	24	Peter Cerrean,	Italian,	Laborer,	21	M.	Coal Brook,			Spine fractured. Struck by a piece of top rock that fell from roof near face.
	24	James Murphy,	American,	Runner,	21	S.	Jermyn,			Thumb bruised. The car that he was about to sprag jumped the track along chamber road and a piece of coal fell on his hand, which was on top of car.
		John Couchner,	Austrian,	Laborer,	30	M.	Gravity Slope,			Compound fracture of arm between elbow and shoulder. A slab of roof fell on him while loading car at face of chamber.
	29	John Shinskio,	Polish,	Doorboy,	17	S.	Raymond,			End of finger bruised while putting sprag in wheel of car along heading road.
Mar	4	John Boros,	Polish,	Laborer,	37	S.	Raymond,			Thumb punctured. While throwing rock on the side of working place his thumb struck the needle.
	10	Angelo Vargarie,	Italian,	Miner,	27	S.	Raymond,		Lackawanna,	Arm and chest bruised and ear almost cut off. He made connection on his batteries to fire a blast near face of chamber. The blast missed fire and he started to put the broken wires together without making a disconnection, when the charge exploded.
	18	Charles Avery,	American,	Laborer,	56	M.	Tip Top,			Back injured. Struck by flying coals from blast while loading car at face of chamber. The charge exploded while his miner was tamping hole.
		Joseph Budeak,	Austrian,	Driver,	20	S.	Sunnyside,			Ear and back of head lacerated and skull probably fractured. Squeezed between mine car and rib on heading road.
	27	John Marcavage,	Polish,	Laborer,	37	M.	Gravity Slope,			Part of hand blown off, eyes injured, and face and legs lacerated by explosion of a box of percussion caps in cross-cut near face.
	29	Ambrose Murray,	American,	Driver,	17	S.	Gravity Slope,			Upper lip lacerated. Kicked by mule while hooking a spreader to mine car on heading road.
April	7	Peter Mascalar,	Polish,	Laborer,	34	M.	Gravity Slope,			Scalp lacerated, wound over eye and ankle contused. Struck by a piece of rock that fell from roof.
	13	Francis Dempsey,	American,	Driver,	19	S.	Coal Brook,			Leg badly bruised by mule falling on him while driving mule out the heading road.

TABLE 5.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
April 14	Stanley Necavage,	Polish,	Driver,	19	S.	Powderly,		Hand lacerated. Run over by car along heading road. He was turning latches when the mule started suddenly.
17	William J. Jones,	Welsh,	Miner,	36	M.	Coal Brook,		Wrist sprained and rib fractured. As he was about to open door on plane along haulage road, a trip of cars struck the door and squeezed him between door and rib of coal.
19	John Kulporviez,	Polish,	Miner,	42	M.	Gravity Slope,		Finger badly lacerated. Run over by car while pulling blocking from underneath mine car wheel.
22	Joseph Consolefskie,	Polish,	Miner,	30	M.	Raymond,		Upper lip punctured and jaw broken. Kicked by mule while passing mule along heading road.
24	William Burke,	Swedish,	Laborer,	28	S.	Powderly,		Chords of leg sprained while lifting armature out of car along heading road.
25	Thomas Donato,	Italian,	Driver,	19	S.	Gravity Slope,	Lackawanna,	Leg bruised below knee. While riding mule from colliery to barn, mule shied against oil tank, catching Donato's leg. Outside.
	Juiko Lorenzo,	Italian,	Laborer,	30	S.	Raymond,		Small bone in ankle fractured and numerous lacerations. A slab of roof fell on him while loading car at face of chamber.
	Dominick Lagotti,	Italian,	Miner,	28	S.	Gravity Slope,		Leg bruised and arm and hand lacerated. Struck by coals from blast. He returned from cross-cut to see why blast had not exploded, when the charge went off.
	Albert Sergino,	Italian,	Miner,	32	M.	Raymond,		Leg broken. He was taking down some rock in face of chamber and a piece fell on his leg.
	Joseph Talbert,	American,	Pumpman,	40	M.	Powderly,		Slightly burned on side. While sitting on bench in pump room his clothes caught fire from his lamp.

April	30	Harry Driany,	Austrian,	Laborer,	34	M.	Powderly,		Hip bruised and lip lacerated from teeth. While opening the door of a hopper car the weight of coal in hopper forced the wrench around, which struck him. Outside.
May	2	Joseph Christopher,	Italian,	Driver,	18	S.	Gravity Slope,		Double fracture of thigh bone. He was riding bumper on front of car along heading road and fell off, and the wheel caught his leg.
	5	James Tolerico,	Italian,	Laborer,	35	M.	Coal Brook,		Shoulder blade fractured and ankle bruised. While hoisting rolls from railroad car he stepped backward onto mine car track and was knocked down by mine car. Outside.
	5	William Weisen,	American,	Brakeman,	19	S.	Powderly,		Hand cut. Caught by point of latch while attempting to close latch while cars were in motion. Outside.
	6	John Cohuite,	American,	Laborer,	23	M.	Coal Brook,		Hand punctured by nail. While coming out of breaker he slipped, and in falling struck his hand against a nail. Outside.
	12	Edward Lane,	American,	Carpenter,	27	S.	Riverside,		Two bones in forearm fractured. He was helping to unload engine from railroad car, and the lever they were using to raise the engine broke and tipped over on his arm. Outside.
	13	Thomas Aruan,	Italian,	Pumpman,	43	M.	Coal Brook,	Lackawanna,	Leg fractured. While pulling mine car from rock tipple by electric hoist the car jumped the track at the frog and caught him. Outside.
		Saul Bursak,	Russian,	Miner,	30	M.	Raymond,		Back sprained by fall of roof at face of chamber while securing it.
	14	Daniel Meehan,	American,	Fireman,	38	S.	Powderly,		Back and arms scalded. While connecting hose on hot water pump the hose connection broke, and he was scalded by escaping hot water. Outside.
	15	Michael Bolosh,	Russian,	Fireman,	40	M.	Powderly,		Arm and back scalded. While connecting hose on hot water pump the connection broke, and he was scalded by escaping hot water. Outside.
		Frank Lucut,	Polish,	Laborer,	47	M.	Raymond,		End of finger cut off. Caught between car and track by a piece of rock that he was unloading. Outside.
	19	Zyrian Horusha,	Polish,	Miner,	42	M.	Raymond,		Knee bruised and cut. Struck by fall of rock while going down the chamber.
	20	Angelo Pietro,	Italian,	Miner,	35	M.	Raymond,		Face, chest, arm and hand injured by explosion of blast. He lighted hole at face of chamber, and after waiting 20 minutes he returned, when charge exploded.

TABLE 5.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
May 21	Fredrick Schwartztranle	American,	Laborer,	26	M.	Powderly,		Thumb dislocated. While repairing the transmission rod on the locomotive, it sprung back and caught his thumb between rod and frame. Outside.
24	John Luizon,	Italian,	Laborer,	28	S.	Coal Brook,		Concussion of brain. Squeezed between car and prop while blocking a car, which was being pulled up by a rope.
	Martin Milsh,	Polish,	Laborer,	25	S.	Powderly,		Lip lacerated and body bruised by fall of rock while shoveling coal from face of chamber to chute.
25	James Vincenzo,	Italian,	Ashman,	37	M.	Coal Brook,		Hand burned and blood poison set in. While pulling ashes from under grates his hand came in contact with fire and was burned. Outside.
	Edward Munley,	American,	Laborer,	35	M.	Gravity Slope,		Two ribs fractured, ankle sprained, and knee sprained and contused. After miner had fired a shot he and the miner went back to chamber, when saddle of rock fell.
31	Anthony Petrone,	Italian,	Miner,	52	M.	Gravity Slope,	Lackawanna,	Toes lacerated and contused wounds on top of head. While barring a piece of coal from cross-cut, a piece of separation rock fell and struck him.
June 5	Galen Perry,	American,	Runner,	38	M.	Coal Brook,		Shoulders and back bruised. Caught between locomotive and telephone pole while riding on locomotive. Outside.
9	John O'Brine,	American,	Miner,	44	M.	Raymond,		Back injured by fall of roof at face of chamber.
15	Mike Risa,	Austrian,	Miner,	28	S.	Jermyn,		Hip dislocated and pelvis fractured by fall of rock from roof while tamping hole in face of chamber.
17	Michael McCann,	American,	Miner,	66	M.	Coal Brook,		Back bruised. Caught by fall of coal while barring down coal at face of chamber.

June	20	James Barrett,	American,	Laborer,	33	M.	Coal Brook,		Finger cut by piece of coal while loading car at face.
	23	John McGarry,	Irish,	Miner,	60	M.	Raymond,		Head, back and leg bruised by explosion of blast at face of chamber before he was able to reach a place of safety.
		John Durkin, Jr.,	American,	Driver,	16	S.	Raymond,		Six teeth knocked out and skin torn from jaw bone. Kicked by mule along heading road while hitching mule to car.
	26	Antonio Larose,	Italian,	Miner,	36	M.	Gravity Slope,		Hip squeezed and back lacerated by runaway car while repairing chamber road.
	28	Tony Tirol,	Polish,	Laborer,	38	M.	Murrins,		Three ribs broken. He was carrying prop in chamber and stumbled, and the prop fell on him.
	29	Thomas Salansky,	Slavonian,	Machinist,	35	M.	West Mountain,		Index finger cut off at first joint. While removing a link from drive chain in breaker, the chain slipped. Outside.
	30	Bol Verhanovisz,	Polish,	Miner,	48	M.	Raymond,		Head, hand and foot injured by fall of roof at face of chamber while standing a prop.
July	1	Max Klem,	Russian,	Laborer,	20	S.	Coal Brook,		Compound fracture of leg and scalp lacerated. While loading car of coal at face of pillar, a piece of coal fell from the pillar and struck him.
	14	Edward Howell,	American,	Laborer,	32	M.	Raymond,	Lackawanna,	Heel struck by prop and later became infected. He was standing a prop at face of chamber and when he turned to get the hammer to tighten the cap, a piece of the prop fell and caught his heel.
	15	Joseph Novibisky,	American,	Laborer,	32	M.	Coal Brook,		Side bruised. Struck by rope while walking on main haulage road.
	18	Joseph Perambo,	Slavonian,	Ashman,	37	M.	Pancoast,		Hands, face and neck scalded by steam from ashes while wetting ashes under boiler. Outside.
	19	Ignatz Wydorkeewiez,	Polish,	Miner,	42	M.	Pancoast,		Face and hands burned by powder. While placing a charge in hole at face of chamber, he lighted a feeder of gas which exploded the powder.
	20	Joseph Mortner,	Italian,	Slatepicker,	45	M.	Pancoast,		Four ribs broken. Caught between cars while sweeping on the upper landing. Outside.
	24	Ludwig Shoninski,	Russian,	Laborer,	50	S.	Pancoast,		Tibia fractured and back bruised. A blast discharged a prop near face of chamber, and while replacing prop a piece of roof fell on him.
		Joseph Kavorinski,	Polish,	Brakeman,	17	S.	Coal Brook,		Four fingers lacerated, necessitating amputation below second joint. He put the replacers under the car and they started to slip, and when he tried to hold them his hand was caught.

TABLE 5.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Aug. 8	Thomas Dombroski,	Polish,	Miner,	31	M.	Jermyn,		Sight of both eyes destroyed, extensive lacerations of face, chest and arms, and clavicle and ribs fractured. While charging a hole at face with giant powder it exploded.
	Wassil Pahota,	Russian,	Miner,	28	M.	Erie,		Back broken by fall of roof while drilling a hole in the coal at face of chamber.
16	Uston Gzella,	Polish,	Laborer,	37	M.	Jermyn,		Compound fracture of leg. He was turning rock car to dump it, and the car overbalanced and caught him. Outside.
17	Andrew Delosky,	American,	Laborer,	38	M.	Coal Brook,		Leg fractured and head lacerated by fall of roof while barring down coal at face.
21	Frank Zelno,	Italian,	Miner,	31	M.	Raymond,		Head cut and side bruised. He cut the match of squib too short and before he could reach a place of safety, some coal from the shot struck him; at face of chamber.
	Sam Oleano,	Italian,	Laborer,	35	M.	Pancoast,	Lackawanna,	Thigh fractured. While loading car at face a piece of top coal fell and caught him.
22	Charles Marieka,	American,	Driver,	17	S.	Pancoast,		Small bone of leg fractured. While driving mule out the heading road he stumbled and fell, and the mule stepped on his leg.
26	Jeffree Baktus,	Lithuanian,	Miner,	52	M.	Pancoast,		Leg fractured. Caught by a bad slab of roof that fell at face of chamber.
30	Peter Talerico,	Italian,	Laborer,	26	M.	Powderly,		Ankle fractured. While loading car at face a small slab of top rock fell and struck him.
Sept. 9	Frank Zapak,	Hungarian,	Laborer,	33	M.	Pancoast,		Compound fracture of leg below the knee. Struck by coal from blast in next chamber 100 feet from face. He went down to heading road to get help to put his car on track.

Sept.	11	Stanley Moreika,	American,	Doorboy,	16	S.	Pancoast,	Leg fractured by falling under moving car on heading road.
	14	Dominick Kolonowski,	Polish,	Laborer,	21	S.	Pancoast,	Foot lacerated and crushed. He was helping the miner stand a prop under a bad slab of roof, when the roof gave way and fell, and the prop caught his foot.
	21	John Rochinski,	Polish,	Footman,	29	M.	Pancoast,	Arm fractured. Struck by a piece of coal that fell down the shaft.
	22	Frank Zenlino,	Polish,	Miner,	35	M.	Raymond,	Leg fractured by a piece of rock that he was barring at face.
		Mike Bolanco,	Polish,	Doorman,	28	S.	Riverside,	Finger broken while taking drag of car at head of slope.
Oct.	3	Thomas Nally,	American,	Miner,	55	M.	Powderly,	Foot lacerated. While drilling a hole in rock at face of chamber a piece of the rock slid from pile onto his foot.
	4	Albert Defactio,	Italian,	Runner,	23	M.	Gravity Slope,	Leg broken. While running car down a chamber it ran off the track and his leg was caught between bumper and rail.
	5	Anthony Embalzano,	American,	Miner,	35	M.	Coal Brook,	Part of foot taken off by explosion of gas. He and the foreman when up the plane to find out where extra water was coming from and walked into a pocket of gas.
	18	John A. Cummings,	American,	Miner,	37	S.	Gravity Slope, Lackawanna,	Face and hand burned by explosion of powder. A spark from his lamp came in contact with powder that he had thrown down carelessly.
		Thomas Gilhool,	American,	Tracklayer,	42	S.	Powderly,	Arm broken. Struck by rope while repairing road.
	19	Alex Ketherick,	Lithuanian,	Miner,	45	M.	Powderly,	Finger infected. While moving a prop at face of chamber a sliver entered his finger.
	23	James Lynn,	American,	Laborer,	47	S.	Gravity Slope,	Finger cut off. While blocking car at face of breast the car ran back and caught his finger.
	25	Alex Sneciski,	American,	Laborer,	32	M.	Jermyn,	Shoulder blade fractured. He was riding in an empty car when it bumped into a loaded car that was standing on the main road.
	27	John Davis,	American,	Brakeman,	18	S.	Jermyn,	Leg fractured. While waiting to sprag a car that was being let down chamber road by motor, the rope broke and car caught him when it jumped the track on curve.
	28	Patrick H. Clark,	American,	Tracklayer,	40	S.	Gravity Slope,	Finger fractured. While running car down chamber he tried to put sprag in the wheel and his finger was caught between piece of coal and grease box.

TABLE 5.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Nov. 6	John Wuilter,	American,	Driver,	21	S.	Powderly,		Leg fractured. While taking a mule to the barn it became unmanageable, and the driver's leg was caught against loaded mine car. Outside.
	Dominick Ruttell,	Italian,	Miner,	39	M.	Powderly,		Ankle fractured by fall of roof while shoveling coal out from face.
9	Becci Baldo,	Italian,	Laborer,	36	M.	Raymond,		Hip and leg injured by fall of roof while shoveling coal out from face.
14	Gasper Pozagay,	Hungarian,	Laborer,	48	M.	Pancoast,		Leg broken by prop rolling on it while loading car of props. Outside.
15	Jake Motacoonis,	Lithuanian,	Laborer,	45	M.	Pancoast,		Compound dislocation of foot. Caught by fall of rock from roof while loading car with coal at face of chamber.
16	Andrew Fealler,	American,	Engineer,	27	M.	Riverside,		Finger broken. Caught by a nut on crank wheel while wiping the conveyor engine while it was in motion. Outside.
22	Otto Miller,	Russian,	Laborer,	26	S.	Gravity Slope,	Lackawanna,	Hand lacerated. While loading a car with coal at face, a pick in the hands of a fellow-laborer glanced off a piece of coal and struck Miller's hand.
23	Thomas P. Williams,	American,	Miner,	50	M.	Jermyn,		Arm broken. While barring down some loose coal at face, the roof fell on him.
	Thomas Voroschuck,	American,	Mason's helper,	37	M.	Coal Brook,		Shoulder fractured. Struck by plank while tearing down a form.
27	Philip Rosie,	American,	Laborer,	26	S.	Raymond,		Knee fractured by fall of roof while loading car with coal at face.
28	John Sutkitus,	Lithuanian,	Tracklayer,	16	S.	Raymond,		Toe broken. Struck by piece of coal that fell off car while stopping loaded car with a block on main road.
Dec. 1	Michael Kutch,	American,	Miner,	54	M.	Jermyn,		Ankle sprained by fall of coal at face of chamber. He had fired a shot and was taking down some coal with the pick, when the coal fell suddenly.

Dec.	2	Michael Orban,	American,	Engineer,	26	M.	Powderly,		Chest and back wrenched and head slightly lacerated. He was holding rope on drum with a hook when his glove caught and he was pulled over the drum. Outside.
	12	John Connor,	American,	Laborer,	38	S.	Powderly,	Lackawanna,	Leg and back bruised. He was close to the mine track when the car tipped over and was caught by falling coal.
		Thomas McDonald,	American,	Trip rider,	18	S.	Gravity Slope,		Forearm fractured. Caught between prop and mine car.
	20	Walter McCann,	American,	Driver,	17	S.	Coal Brook,		Small bone in wrist fractured. Hand was caught between roof and car while riding on loaded car.

CONDITION OF COLLIERIES

DELAWARE AND HUDSON COMPANY, INSIDE
HUDSON COAL COMPANY, OUTSIDE

Powderly and Coal Brook Collieries.—Ventilation, roads, drainage and condition as to safety, good.

Jermyn and Gravity Slope Collieries.—Ventilation, roads and drainage, fair. Condition as to safety, good.

PRICE-PANCOAST COAL COMPANY

Pancoast Colliery.—Ventilation, roads and drainage, good. Condition as to safety, fair, owing to a squeeze which affected each vein.

SCRANTON COAL COMPANY

Raymond and Riverside Collieries.—Ventilation, roads and drainage, fair. Condition as to safety, good.

ARCHBALD COAL COMPANY

Tappans Colliery.—Ventilation and condition as to safety, good. Roads and drainage, fair.

HILLSIDE COAL AND IRON COMPANY

Erie Colliery.—Ventilation, roads and drainage, fair. Condition as to safety, good.

HUMBERT COAL COMPANY

Sunnyside Colliery.—Ventilation, roads, and drainage and condition as to safety, fair.

WEST MOUNTAIN COAL COMPANY

West Mountain Colliery.—Ventilation, roads and drainage, good. Condition as to safety, good.

TIP TOP COAL COMPANY

Tip Top Colliery.—Ventilation, roads, drainage and condition as to safety, fair.

FALL BROOK COAL COMPANY

Murrins Colliery.—Ventilation, roads, drainage and condition as to safety, fair.

MAXEY COAL COMPANY

Tipperary Colliery.—Ventilation, roads, drainage and condition as to safety, fair.

IMPROVEMENTS

DELAWARE AND HUDSON COMPANY, INSIDE
HUDSON COAL COMPANY, OUTSIDE

Powderly Colliery.—No. 9 tunnel, from Clark to Top Clark was extended 400 feet.

Coal Brook Colliery.—The breaker was remodeled to increase capacity. A rock plane 175 feet long was driven from 3rd vein to Bottom Clark; No. 21 plane was extended 1,600 feet and equipped with electric hoist; 8,700 feet pipe line laid from Wilson Creek to breaker, for water supply.

Four 7-ton electric locomotives were installed to improve transportation.

Jermyn Colliery.—No. 17 rock plane, 350 feet long, was driven from Grassy to Top Grassy. No. 11 tunnel, 150 feet long, from Grassy to Top Grassy. No. 12 tunnel, 260 feet long, extended from Clark to Top Clark, Airshaft, surface to Top Clark, 60 feet.

Gravity Slope Colliery.—A rock slope, 80 feet long, was driven through fault in Archbald bed. Tunnel from surface to Dunmore bed, 325 feet; rock plane through fault in Dunmore bed, 250 feet; airshaft from surface to Archbald bed, connected. An 800-gallon electric pump was installed in No. 3 slope, Archbald bed, and two 10-ton electric locomotives in Dunmore bed.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in Carbondale High School, Carbondale, Pa., June 6 and 7. The Board of Examiners was composed of the following persons: P. J. Moore, Mine Inspector, Carbondale; Richard Beer, Superintendent, Carbondale; John F. Boland, Miner, Carbondale; David Evans, Miner, Blakely.

The following persons passed a satisfactory examination and were granted certificates:

MINE FOREMEN

Michael Munley, Jessup; Wade F. Rodham, Scranton; James T. Stephens, Peckville.

ASSISTANT MINE FOREMEN

Lewis D. Jones, Olyphant; Frank Moon, Jermyn; Anthony J. Conaboy, Thomas G. Williams, John W. Williams, Leo Healey, Joseph Surdoval, Carbondale; Edward J. Magnar, Jessup; Isaac Benjamine, Scranton.

THIRD DISTRICT

LACKAWANNA COUNTY

Scranton, Pa., March 3, 1917.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor to transmit herewith my report as Inspector of Mines for the Third Anthracite District, for the year ending December 31, 1916.

Respectfully submitted,

L. M. EVANS,
Inspector.

SUMMARY OF STATISTICS

Number of collieries,	9
Number of mines,	23
Number of mines in operation,	22
Number of gaseous mines in operation,	17
Number of non-gaseous mines in operation,	5
Number of tons of coal shipped to market,	2,617,013
Number of tons used at mines for steam and heat,	284,552
Number of tons sold to local trade and used by employes,	49,064
Number of tons produced,	2,950,629
Number of tons produced by compressed air machines,	.....
Number of tons produced by electrical machines,	113,177
Number of persons employed inside of mines,	4,846
Number of persons employed outside,	1,414
Number of persons employed inside between 16 and 21 years,	372
Number of persons employed outside between 14 and 21 years,	209
Number of fatal accidents inside,	17
Number of fatal accidents outside,	.....
Number of non-fatal accidents inside,	31
Number of non-fatal accidents outside,	4
Number of tons of coal produced per fatal accident inside,	173,566
Number of tons produced per fatal accident inside and outside,	173,566
Number of persons employed per fatal accident inside,	285
Number of persons employed per fatal accident outside,	.....
Number of persons employed per fatal accident inside and outside,	368
Number of persons employed per non-fatal accident inside,	156
Number of persons employed per non-fatal accident outside,	353
Number of persons employed per non-fatal accident inside and outside,	179
Number of wives made widows,	10
Number of children made orphans,	15
Number of steam locomotives inside,	.....
Number of steam locomotives outside,	8
Number of compressed air locomotives inside,	33
Number of compressed air locomotives outside,	.....
Number of electric motors inside,	35
Number of electric motors outside,	.....
Number of gasoline locomotives inside,	.....
Number of gasoline locomotives outside,	.....
Number of cylindrical boilers,	.....
Number of tubular boilers,	58

Number of steam engines of all classes,	204
Number of electric dynamos,	4
Number of pumps of all classes,	30
Number of pumps delivering water to surface,	36
Number of air compressors,	5
Number of fans in use,	18

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Delaware and Hudson Company,	1,979,805
Delaware, Lackawanna and Western Railroad Company,	868,884
Bulls Head Coal Company,	43,617
Clearview Coal Company,	38,619
Scranton Coal Company,	19,704
Totals,	2,950,629

Production by Counties

Lackawanna,	2,950,629

TABLE B.—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Total number of employes	Number of employes inside per fatal accident	Number of employes outside per fatal accident	Number of employes inside per non-fatal accident	Number of employes outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Delaware and Hudson Co.,	11	----	11	21	4	25	179,982	94,276	3,059	1,037	4,096	278	----	146	259
Delaware, Lackawanna and Western Railroad Co.,	4	----	4	8	----	8	217,221	108,611	1,477	294	1,771	369	----	185	----
Bulls Head Coal Co.,	1	----	1	1	----	1	43,617	43,617	130	35	165	130	----	130	----
Clearview Coal Co.,	1	----	1	----	----	----	38,619	----	120	18	138	120	----	----	----
Scranton Coal Co.,	----	----	----	1	----	1	----	19,704	60	30	90	----	----	60	----
Totals and averages,	17	----	17	31	4	35	173,566	95,182	4,846	1,414	6,260	285	----	156	353

TABLE C.—Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of roof,		3			4		1	1	1				10	58.82
Mine cars,					1	1						1	3	17.65
Blasts, premature and otherwise,				1	2				1				4	23.53
Totals,		3		1	7	1	1	1	2			1	17	100.00
Outside (No Accidents)														

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of roof,				1	2	1		1			2		7	22.58
Mine cars,	1	1	5	1	3	2					1	1	15	48.39
Blasts, premature and otherwise,			2	1			2				1		6	19.35
Mules,	1												1	3.23
Machinery,			1		1								2	6.45
Totals,	2	1	8	3	6	3	2	1			4	1	31	100.00
Outside														
Cars,	1		1										2	50.00
Machinery,	1												1	25.00
By falling,					1								1	25.00
Totals,	2		1		1								4	100.00
Grand totals,	4	1	9	3	7	3	2	1			4	1	35	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,		2		1	2				2				7
Miners' laborers,					3		1						4
Drivers and runners,					1	1		1					3
Doorboys and helpers,												1	1
Companymen,		1			1								2
Totals,		3		1	7	1	1	1	2			1	17
Outside (No Accidents)													

TABLE F.—Occupation of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,			2		3	1	2				3		11
Miners' laborers,			3	2				1				1	7
Drivers and runners,	1	1	2		2						1		7
Motormen and assistants,						2							2
Companymen,	1		1	1	1								4
Totals,	2	1	8	3	6	3	2	1			4	1	31
Outside													
Slatepickers (boys),					1								1
Headmen,			1										1
Companymen,	2												2
Totals,	2		1		1								4
Grand totals,	4	1	9	3	7	3	2	1			4	1	35

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,					1			1					2
English,												1	1
Irish,							1						1
Polish,		1		1	1				1				4
Italian,		1											1
Slavonian,					1								1
Lithuanian,		1			3				1				5
Austrian,					1								1
Russian,						1							1
Totals,		3		1	7	1	1	1	2			1	17

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	2		3	1	3	2					1		12
English,	1					1							2
Welsh,			2	1									3
Irish,					1						1		2
Polish,		1	2	1	2		1						7
Italian,	1												1
Lithuanian,			2		1		1	1			2		7
Russian,												1	1
Totals,	4	1	9	3	7	3	2	1			4	1	35

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or Non-gaseous	Number and types of safety lamps used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Delaware and Hudson Co. Eddy Creek Colliery:										
Eddy Creek,	Lackawanna,	E or Diamond,	32							
		C or Clark,	51	785				Gaseous,	6	
		B or Dunmore No. 4,	60							
		B or Dunmore No. 2,	50							
		D or New County,	52				Drift,	Non-gas.,	4	
		C or Clark,	55				Drift,	Non-gas.,		
Birdseye,	Lackawanna,	C or Bottom split Clark Vein.	40				Drift,	Non-gas.,		
		F or Rock,	60							
Olyphant,	Lackawanna,	E or Diamond,	32	400						
		F or Rock,	62		405	12		Gaseous,	20	
Legitts Creek Colliery:										
No. 1,	Lackawanna,	F or Five Foot,	54	282				Gaseous,	3	
		E or Diamond,	84							
No. 2,	Lackawanna,	F or Five Foot,	54	518				Gaseous,	3	
		E or Diamond,	84							
No. 3,	Lackawanna,	B or Dunmore No. 3,	38	699				Gaseous,	6	
		B or Dunmore No. 4,	46							

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or Non-gaseous	Number and types of safety lamps used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Marvine Colliery:										
No. 1,	Lackawanna,	E or Diamond,	78	449				Gaseous,	6	
		F or Rock,	29							
		C or Top Split,	90							
		C or Bot. Split,	72							
		D or New County,	48							
		C or Clark,	78							
No. 2,	Lackawanna,	B or Dunmore No. 3,	38		350	18		Gaseous,	6	
		B or Dunmore No. 4,	46	581	1,300	12		Gaseous,	6	
Dickson and Von Storch Colliery:										
Dickson,	Lackawanna,	D or New County,	39	460				Gaseous,	25	
		B or Dunmore No. 2,	28	460				Gaseous,		
		B or Dunmore No. 3,	39							
		B or Dunmore No. 4,	42							
Von Storch,	Lackawanna,	E or Diamond,	84							
		F or Rock (Top),	36	533	1,400	11		Gaseous,	5	
		F or Rock (Bottom)	38							
		D or New County,	38							
Von Storch,	Lackawanna,	E or Five Foot,	55							
		E or Four Foot,	46	358						
		F or Rock,	38							

Delaware, Lackawanna and Western Railroad Co.										
Diamond Colliery:										
No. 2 Old,	Lackawanna,	D or New County, E or Big,						Gaseous,	10	
Drift,	Lackawanna,	E or Four Foot, E or Five Foot, E or Eight Foot,						Non-gas.,	4	
Tripps No. 1,	Lackawanna,	F or Rock, G or Diamond,		449				Gaseous,	22	
Cayuga Colliery:										
Cayuga,	Lackawanna,	E or Five Foot, E or Four Foot, F or Rock Vein, E or 14 Foot, C or Clark, B or Dunmore No. 1, B or Dunmore No. 3,		525				Gaseous,	8	
Bulls Head Coal Co.										
Bulls Head Colliery:										
Bulls Head,	Lackawanna,	F or Rock, E or 14 Foot, D or New County, C or Clark,			600	15		Non-gas.,		
Clearview Coal Co.										
Clearview Colliery:										
Clearview,	Lackawanna,	F or Rock, E or Eight Foot,		264				Non-gas.,		
Scranton Coal Co.										
West Ridge Colliery:										
West Ridge,	Lackawanna,	E or Four Foot, D or 30 inch Vein,	36 22		450	12		Gaseous,	6	

TABLE I.— Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Delaware and Hudson Co. Eddy Creek Colliery:												
Eddy Creek,	Lackawanna,	E or Diamond, C or Clark, B or Dunmore No. 4, B or Dunmore No. 2, D or New County, C or Clark,	Guibal,	28	65	2.5	Steam,	220,750	211,065	239,630	9	218
Birdseye,	Lackawanna,	C or Bottom split Clark Vein.	Guibal,	17	80	1.6	Electricity,	48,501	48,082	74,258	2	52
					80	1.6	Electricity,	65,920	48,301	74,314	3	120
		F or Rock,	Buffalo,	5	100	1	Electricity,	24,227	15,771	29,748	1	40
Olyphant,	Lackawanna,	E or Diamond, F or Rock,	Guibal,	22	95	2.2	Steam,	210,266	177,584	240,072	10	422
Legitts Creek Colliery: No. 1,	Lackawanna,	F or Five Foot, E or Diamond,	Guibal,	20	73	14	Steam,	39,290	34,600	42,640	3	57
No. 2,	Lackawanna,	F or Five Foot, E or Diamond,	Guibal,	20	80	1.3	Steam,	95,660	87,710	102,680	5	197
No. 3,	Lackawanna,	B or Dunmore No. 3, B or Dunmore No. 4,	Guibal,	22	86	2	Steam,	150,059	120,560	163,700	6	138

Marvine Colliery:												
No. 1,	Lackawanna,	E or Diamond, / F or Rock, / C or Top Split, / C or Bot. Split,	Guibal,	28	66	3.5	Steam,	139,400	126,300	145,370	4	191
No. 2,	Lackawanna,	D or New County, / C or Clark, / B or Dunmore No. 3,	Guibal,	22	75	1.5	Steam,	236,150	206,890	255,903	7	314
		B or Dunmore No. 4,	Guibal,	22	75	1.6	Steam,	90,600	81,600	95,300	3	54
Dickson and Von Storch Colliery:												
Dickson,	Lackawanna,	D or New County,	Guibal,	20	84	1.8	Steam,	187,380	148,030	213,520	9	266
		B or Dunmore No. 2,	Guibal,	20	75	1.6	Steam,	20,000	18,600	21,000	1	22
		B or Dunmore No. 3, / B or Dunmore No. 4,										
Von Storch,	Lackawanna,	G or Diamond, / F or Rock (Top), / F or Rock (Bottom)	Guibal,	22	86	2.2		57,880	52,389	63,900	5	168
Von Storch,	Lackawanna,	D or New County, / E or Five Foot, / E or Four Foot, / F or Rock,										
Delaware, Lackawanna and Western Railroad Co. Diamond Colliery:												
No. 2 Old,	Lackawanna,	D or New County, / E or Big,	Guibal,	14	90	1.5	Steam,	123,000	154,000	37,000	7	1,041
Drift,	Lackawanna,	E or Four Foot, / E or Five Foot, / E or Eight Foot,	Guibal,	14	90	1.5	Steam,	48,460	52,380	79,000	3	
Tripps No. 1,	Lackawanna,	F or Rock, / G or Diamond,	Jeffrey,	15.6	88	1.8	Steam,	146,480	180,320	38,700	8	
Cayuga Colliery:												
Cayuga,	Lackawanna,	E or Five Foot, / E or Four Foot, / F or Rock Vein, / E or 14 Foot, / C or Clark, / B or Dunmore No. 1, / B or Dunmore No. 3,	Jeffrey,	18	85	2.5	Steam,	172,289	182,839	161,982	10	432
Bulls Head Coal Co. Bulls Head Colliery:												
Bulls Head,	Lackawanna,	F or Rock,						11,000	12,000	6,000	4	130
		E or 14 Foot,						10,800	11,000	7,000		
		D or New County,						6,000	6,000	4,000		
		C or Clark,						13,000	11,000	7,000		

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Clearview Coal Co.												
Clearview Colliery:												
Clearview,	Lackawanna,	{F or Rock, / E or Eight Foot,						{10,000 / 8,000	11,000 / 9,000	6,000 / 45,000	2	125
Scranton Coal Co.												
West Ridge Colliery:												
West Ridge,	Lackawanna,	{E or Four Foot, / D or 30 inch Vein,	Guibal,	20	80	1.8	Steam,	17,000	20,000	15,000	4	50

TABLE J.—Operators and mines, name of coal bed, kind of openings, mining machines used and approximate number of tons produced by machines

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of opening	Gaseous or non-gaseous	Mining Machines		Approximate number of tons produced by machines
						Electric	Compressed air	
Delaware and Hudson Co.								
Eddy Creek,	Lackawanna,	D or New County,	52	Shaft,	Gaseous,	1		1,613
		E or Upper 4 foot,	40	Shaft,	Gaseous,	2		12,085
		B or Dunmore,		Shaft,	Non-gas.,	1		32,059
Marvine,	Lackawanna,	B or Dunmore No. 3,		Shaft,	Gaseous,	3		1,880
		B or Dunmore,		Shaft,	Gaseous,	4		17,281
Von Storch,	Lackawanna,	F or Rock,	38	Shaft,	Gaseous,	1		1,886
Totals,						12		66,804
Delaware, Lackawanna and Western Railroad Co.								
Diamond,	Lackawanna,	F or Rock,	60					
		B or Dunmore Nos. 1, 2, 3.	66	Shaft,	Gaseous,	6		36,747
Cayuga,	Lackawanna,	E or Five Foot,	48	Shaft,	Gaseous,	5		2,500
Totals,						11		39,247
Bulls Head Coal Co.								
Bulls Head,	Lackawanna,	F or Rock,	36	Slope,	Non-gas.,	1		7,126
Grand totals,						24		113,177

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	General Superintendent	Post Office	Superintendent	Post Office	Railroad to Mine
Delaware and Hudson Co. Eddy Creek, Marvine, Legitts Creek, Dickson and Von Storch,	Lackawanna,	Cadwalder Evans, Jr., Inside; Chas. Dorrance, Outside	Scranton,	S. E. Van Horn, Edward McGlynn, J. H. Pritchard, J. H. Pritchard,	Scranton, Scranton, Olyphant, Olyphant,	Delaware and Hudson
Washeries: Eddy Creek, Marvine No. 2, Legitts Creek, Von Storch,	Lackawanna,	Charles Dorrance,	Scranton,	S. E. Van Horn, Edward McGlynn, J. H. Pritchard,	Scranton, Scranton, Olyphant,	Delaware and Hudson
Delaware, Lackawanna and Western Railroad Co. Diamond, Cayuga, Cayuga Washery,	Lackawanna,	W. W. Inglis,	Scranton,	S. J. Jennings, Frank G. Dagger, S. J. Jennings,	Pittston, Scranton, Pittston,	D. L. and W.
Bulls Head Coal Co. Bulls Head,	Lackawanna,	David Spruks,	Scranton,	Charles H. Walker,	Scranton,	N. Y. O. and W.
Clearview Coal Co. Clearview,	Lackawanna,	David Spruks,	Scranton,	Charles H. Walker,	Scranton,	N. Y. O. and W.
Scranton Coal Co. West Ridge,	Lackawanna,	Daniel Young, Sr.,	Scranton,	J. F. Cummings,	Scranton,	N. Y. O. and W.

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives		
										Pounds of black powder used	Pounds of dynamite used	Pounds of permissible explosives used
Delaware and Hudson Co.												
Eddy Creek,	Lackawanna,	634,249	28,125	----------	662,374	291	1,409	6	5	703,260	46,723	749,167
Marvine,		337,034	38,606	5,310	380,950	291	918	3	11	472,350	73,467	543,817
Legitts Creek,		140,898	978	12,946	154,822	102	659	----	4	263,725	39,690	303,415
Dickinson and Von Storch,		266,199	31,931	11,590	309,720	208	927	2	5	498,225	49,416	547,641
		1,378,380	99,640	29,846	1,507,866	------	3,913	11	25	1,935,560	209,296	2,144,040
Washeries												
Eddy Creek,	Lackawanna,	7,315	15,328	----------	22,643	60	*	----	----	----------	----------	----------
Marvine No. 2,		186,821	35,951	----------	222,772	417	116	----	----	----------	----------	----------
Legitts Creek,		----------	95,815	----------	95,815	*	21	----	----	----------	----------	----------
Von Storch,		109,327	21,382	----------	130,709	231	46	----	----	----------	----------	----------
		303,463	168,476	----------	471,939	------	183	----	----	----------	----------	----------
Totals,		1,681,843	268,116	29,846	1,979,805	------	4,096	11	25	1,935,560	209,296	2,144,040
Delaware, Lackawanna and Western Railroad Co.												
Diamond,	Lackawanna,	581,050	255	78	581,383	274	1,252	3	2	746,925	89,479	----------
Cayuga,		205,845	61	----------	205,906	265	470	1	6	153,000	227,587	----------
		786,895	316	78	787,289	------	1,722	4	8	899,925	317,066	----------
Cayuga Washery,	Lackawanna,	76,250	5,345	----------	81,595	239	49	----	----	----------	----------	----------
Totals,		863,145	5,661	78	868,884	------	1,771	4	8	899,925	317,066	----------

*Included with colliery.

TABLE 2—Part I—Continued

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives		
										Pounds of black powder used	Pounds of dynamite used	Pounds of permissible explosives used
Bulls Head Coal Co. Bulls Head,	Lackawanna,	23,602	1,600	18,415	43,617	284	165	1	1	31,250	----------	4,025
Clearview Coal Co. Clearview,	Lackawanna,	38,589	30	----------	38,619	301	138	1	----	450	16,600	22,550
Scranton Coal Co. West Ridge,	Lackawanna,	9,834	9,145	725	19,704	48	90	----	1	23,750	6,000	----------
Grand totals,	----------	2,617,013	284,552	49,064	2,950,629	------	6,260	17	35	2,890,935	548,962	2,170,615

TABLE 2.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Names of Operators	County	Power Plant										Pumps				Haulage					Air Compressors	
		Boilers				Engines											Locomotives					
		Cylindrical		Tubular		Steam Engines (All Classes)		Internal Combustion Engines (Gas)		Electric Dynamos (All Classes)		Number	Total capacity in gallons per minute	Pumps Delivering Water to the Surface		Number of horses and mules	Gasoline	Steam	Air	Electric	Number	Total capacity cubic feet per minute
		Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total kilowatts			Number	Approximate number of gallons per minute							
Delaware and Hudson Co.,	Lackawanna,	----	----	37	9,000	159	9,859	----	----	2	----	15	30,480	15	12,340	206	----	4	33	21	4	----
Delaware, Lackawanna and Western Railroad Co.		----	----	14	3,500	32	3,434	----	----	----	----	10	6,250	15	8,488	135	----	4	----	12	----	----
Bulls Head Coal Co.,		----	----	1	200	3	195	----	----	1	75	1	200	----	----	27	----	----	----	----	----	----
Clearview Coal Co.,		----	----	----	----	----	----	----	----	1	150	----	----	----	----	4	----	----	----	2	1	140
Scranton Coal Co.,		----	----	6	490	10	875	----	----	----	----	4	850	6	550	15	----	----	----	----	----	----
Totals,		----	----	58	13,190	204	14,363	----	----	4	225	30	37,780	36	21,378	387	----	8	33	35	5	140

TABLE 3.—Part 1.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside															Total inside	Outside									Total outside	Grand total inside and outside
		Mine foremen	Assistant mine foremen	Fire bosses	Miners	Miner's laborers	Machine miners	Machine runners and scrapers	Drivers and runners	Motormen and assistants	Doorboys and helpers	Trackmen and bratticemen	Timbermen and rockmen	Pumpmen and pipemen	Electricians and helpers	All other employes		Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Machinists and helpers	Trackmen and helpers	Slate pickers (boys)	Slate pickers (men)	Office employes	All other employes		
Delaware and Hudson Co.	Lackawanna	5	10	30	952	908	6	40	364	89	65	47	69	24	6	444	3,059	----	14	38	124	46	5	33	211	13	553	1,037	4,096
Delaware, Lackawanna and Western Railroad Co.	Lackawanna	4	21	----	504	532	1	18	100	43	38	36	22	20	9	129	1,477	----	3	18	36	3	3	43	8	5	175	294	1,771
Bulls Head Coal Co.	Lackawanna	1	1	1	30	70	1	4	15	----	----	2	5	----	----	----	130	1	1	3	4	----	3	5	3	3	12	35	165
Clearview Coal Co.	Lackawanna	1	1	1	30	32	----	----	12	----	----	2	7	----	1	33	120	1	1	2	3	----	----	----	6	1	10	18	138
Scranton Coal Co.	Lackawanna	1	----	1	29	15	----	----	6	----	----	2	2	2	----	11	60	----	1	3	6	----	----	----	3	1	10	30	90
Totals,		12	33	33	1,536	1,557	8	62	497	132	103	89	105	46	16	617	4,846	2	20	64	173	49	11	87	225	23	760	1,414	6,269

TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Total
Delaware and Hudson Co.,	Lackawanna,	22	22	17	20	20	18	18	20	19	19	21	22	238
Delaware, Lackawanna and Western Railroad Co.,		21	22	24	13	25	24	25	26	23	21	23	22	269
Bulls Head Coal Co.,		25	25	23	23	22	24	20	25	25	24	25	23	281
Clearview Coal Co.,		25	25	27	24	25	25	25	25	25	25	25	25	301
Scranton Coal Co.,		8	5	4	3	3	4	4	4	4	3	3	3	48

TABLE 4.—Fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Feb. 8	William Kavanski,	Lithuanian,	Miner,	40	M.	1	----	Von Storch,	Lackawanna,	Fatally injured by fall of roof on gangway.
12	Paul Kose,	Italian,	Companyman,	29	M.	1	2	Eddy Creek,		Killed by fall of rock while repairing shaft.
23	Joseph Krinskie,	Polish,	Miner,	28	S.	----	----	Marvine,		Killed by fall of roof at face of chamber.
April 27	John Verchmiskie,	Polish,	Miner,	31	S.	----	----	Marvine,		Killed by explosion of blast at face of chamber.
May 5	Andrew Karwart,	Slavonian,	Miner,	29	M.	1	----	Eddy Creek,		Killed by explosion of blast at face of chamber.
	Kazmer Bermiskfski,	Polish.	Laborer,	23	M.	1	2	Eddy Creek,		
8	Paul Kanisras,	Lithuanian,	Laborer,	25	S.	----	----	Diamond,		Killed by fall of roof at face of chamber.
9	John Tedacheck,	Lithuanian,	Runner,	25	S.	----	----	Diamond,		Killed by cars on gangway.
20	Albert Cherko,	Austrian,	Miner,	29	M.	1	3	Eddy Creek,		Killed by fall of roof at face of chamber.
23	George Gitcavage,	Lithuanian,	Laborer,	42	S.	----	----	Cayuga,		Killed by fall of roof at face of chamber.
29	Frank Stipp,	American,	Companyman,	34	M.	1	----	Clearview,		Killed by fall of roof on gangway.
June 21	John Harrack,	Russian,	Runner,	21	S.	----	----	Eddy Creek,		Killed by cars on gangway.
July 11	Michael Timlin,	Irish,	Laborer,	60	M.	1	2	Bulls Head,		Killed by fall of roof in chamber.
Aug. 4	Daniel Maechen,	American,	Runner,	23	S.	----	----	Marvine,		Killed by fall of roof on gangway.
Sept. 18	Michael Scotch,	Polish,	Miner,	38	M.	1	3	Von Storch,		Killed by explosion of blast in chamber.
29	Joseph Berzitus,	Lithuanian,	Miner,	50	W.	----	----	Diamond,		Fatally injured by fall of roof at face of chamber.
Dec. 27	Henry Boath,	English,	Doorman,	59	M.	1	3	Eddy Creek,		Killed by cars on gangway.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 4	James J. Sweeney,	American,	Driver,	18	S.	Marvine,	Lackawanna,	Kidney ruptured. Kicked by a mule he was passing on gangway.
6	John Knott,	English,	Companyman,	46	M.	Von Storch,		Leg fractured by cars on gangway.
	William Stanton,	American,	Companyman,	18	S.	Marvine,		Leg fractured while riding on conveyor line. Outside.
17	Samuel Vera,	Italian,	Companyman,	52	M.	Von Storch,		Arm fractured by railroad cars. Outside.
Feb. 5	Walter Rohan,	Polish,	Driver,	18	S.	Diamond,		Shoulder and leg injured by cars on gangway.
Mar. 2	Adolph Iranicke,	American,	Driver,	17	S.	Marvine,		Arm fractured by cars on gangway.
4	John Welsh,	American,	Companyman,	25	S.	West Ridge,		Head lacerated by cars on gangway.
	John Kernicha,	American,	Driver,	17	S.	Eddy Creek,		Skull fractured by cars on gangway.
7	Evan Thomas,	Welsh,	Headman,	50	M.	Marvine,		Leg fractured by cars near breaker. Outside.
	Joseph Watkins,	Lithuanian,	Miner,	33	S.	Cayuga,		Leg fractured by cars in chamber.
8	Anthony Block,	Polish,	Laborer,	30	S.	Cayuga,		Ankle dislocated by cars on gangway.
10	William S. Morgan,	Welsh,	Laborer,	67	M.	Legitts Creek,		Shoulder fractured by machinery on gangway.
20	Joseph Petritus,	Lithuanian,	Miner,	32	M.	Cayuga,		Back and head lacerated by explosion of blast in chamber.
	Joseph Supper,	Polish,	Laborer,	40	M.			
April 15	John H. Nolan,	American,	Companyman,	28	M.	Legitts Creek,		Ankle fractured by fall of roof in chamber.
27	Anthony Verchmiski,	Polish,	Laborer,	33	S.	Marvine,		Ankle sprained by explosion of blast at face of chamber.
29	William Edwards,	Welsh,	Laborer,	47	M.	Legitts Creek,		Rib fractured by cars on gangway.
May 2	John P. Lego,	American,	Slatepicker,	14	S.	Marvine,		Arm fractured by falling in the breaker. Outside.
4	Anthony Carey,	American,	Runner,	20	S.	Legitts Creek,		Leg fractured by cars at foot of slope.
	Thomas Timlin,	Irish,	Companyman,	47	M.	Von Storch,		Arm lacerated by cars on slope.
13	Wadslop Jescavage,	Polish,	Miner,	34	M	Diamond,		Rib fractured by fall of roof at face of chamber.
24	Anthony White,	Lithuanian,	Miner,	50	M.	Von Storch,		Body bruised by fall of roof at face of chamber.
27	Eugene Cosgrove,	American,	Runner,	23	S.	Von Storch,		Pelvis injured by cars in chamber.

TABLE 5.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
May 27	Charles Wykitis,	Polish,	Miner,	32	M.	Marvine,		Collar bone fractured. Drilling machine fell on him.
June 3	Charles Davis,	American,	Motorman,	30	S.	Cayuga,		Leg fractured by cars on gangway.
6	James H. Jenkins,	English,	Miner,	51	M.	Marvine,		Leg fractured by fall of roof at face of chamber.
28	Brenton Bailey,	American,	Brakeman,	18	S.	Cayuga,		Leg lacerated by cars on gangway.
July 14	Anthony Konoski,	Polish,	Miner,	34	M	Eddy Creek,		Leg lacerated by explosion of blast at face of chamber.
24	William Bodden,	Lithuanian,	Miner,	37	M.	Marvine,		Injured about body by explosion of blast in chamber.
Aug. 3	Peter Mackilincki,	Lithuanian,	Laborer,	28	S.	Bulls Head,	Lackawanna,	Spine fractured by fall of roof at face of chamber.
Nov. 29	John Vinies,	Lithuanian,	Miner,	33	M.	Marvine,		Eyes injured by explosion of blast at face of chamber.
16	Charles Selvin,	Lithuanian,	Runner,	26	M.	Marvine,		Arm fractured by cars at foot of shaft.
	Patrick Smith,	Irish,	Miner,	38	M.	Eddy Creek,		Spine fractured by fall of roof at face of chamber.
22	Harry Meyle,	American,	Miner,	45	M	Eddy Creek,		Rib fractured and spine injured by fall of roof in chamber.
Dec. 8	John Poslainak,	Russian,	Laborer,	36	M.	Eddy Creek,		Leg fractured by fall of roof at face of chamber.

CONDITION OF COLLIERIES

DELAWARE AND HUDSON COMPANY

Eddy Creek and Marvine Collieries.—Ventilation, roads, drainage and condition as to safety, good.

Dickson, Von Storch and Legitts Creek Collieries.—Ventilation, roads and drainage, fair. Condition as to safety, good.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Diamond and Cayuga Collieries.—Ventilation, roads, drainage and condition as to safety, good.

BULLS HEAD COAL COMPANY

Bulls Head Colliery.—Ventilation, roads and drainage, fair. Condition as to safety, good.

CLEARVIEW COAL COMPANY

Clearview Colliery.—Ventilation, roads and drainage, fair. Condition as to safety, good.

SCRANTON COAL COMPANY

West Ridge Colliery.—Ventilation, roads and drainage, fair. Condition as to safety, good.

IMPROVEMENTS

DELAWARE AND HUDSON COMPANY

Eddy Creek Colliery.—Completed tunnel, 300 feet long, through fault in Diamond bed; tunnel, 285 feet long, from Clark to New County vein; tunnel, 110 feet long, from Fourteen Foot bed to Rider; tunnel, 230 feet long, from Four Foot to Twenty Inch bed; and rock plane, 185 feet long, through fault in Fourteen Foot bed, Birdseye, and rock plane, 65 feet from Four Foot to Twenty Inch bed.

Legitts Creek Colliery.—The New County vein was opened in No. 3 shaft. Completed a tunnel, 450 feet long, driven through the fault in the Rock bed, and a rock plane, 160 feet long, from Rock to Diamond vein.

Dickson and Von Storch Collieries.—At Dickson mine a rock plane was driven 150 feet, from No. 2 Dunmore to connect with the Clark vein.

In the Von Storch section, a rock plane, 140 feet long, was driven from Top Rock to Diamond vein, and an air shaft 40 feet deep was sunk from Top Rock to Rock vein.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Diamond Colliery.—Installed a new ventilating fan.

Cayuga Colliery.—Installed a new simplex jig; one new Hazleton jig; one new conveyor line and one 50 HP. motor.

FOURTH DISTRICT

LACKAWANNA COUNTY

Scranton, Pa., February 15, 1917.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor to transmit herewith my report as Inspector of Mines of the Fourth Anthracite District, for the year ending December 31, 1916.

Respectfully submitted,

J. T. REESE,
Inspector.

SUMMARY OF STATISTICS

Number of collieries,	10
Number of mines,	12
Number of mines in operation,	12
Number of gaseous mines in operation,	11
Number of non-gaseous mines in operation,	1
Number of tons of coal shipped to market,	2,241,928
Number of tons used at mines for steam and heat,	171,182
Number of tons sold to local trade and used by employes,	165,557
Number of tons produced,	2,578,667
Number of tons produced by electrical machines,	206,001
Number of persons employed inside of mines,	4,037
Number of persons employed outside,	1,088
Number of persons employed inside between 16 and 21 years,	251
Number of persons employed outside between 14 and 21 years,	215
Number of fatal accidents inside,	21
Number of fatal accidents outside,	1
Number of non-fatal accidents inside,	36
Number of non-fatal accidents outside,	2
Number of tons of coal produced per fatal accident inside,	122,793
Number of tons produced per fatal accident inside and outside,	117,212
Number of persons employed per fatal accident inside,	192
Number of persons employed per fatal accident outside,	1,088
Number of persons employed per fatal accident inside and outside,	233
Number of persons employed per non-fatal accident inside,	112
Number of persons employed per non-fatal accident outside,	544
Number of persons employed per non-fatal accident inside and outside,	135
Number of wives made widows,	17
Number of children made orphans,	19
Number of steam locomotives outside,	3
Number of electric motors inside,	42
Number of electric motors outside,	2
Number of cylindrical boilers,	12
Number of tubular boilers,	53
Number of steam engines of all classes,	123

Number of electric dynamos,	16
Number of pumps of all classes,	85
Number of pumps delivering water to surface,	27
Number of air compressors,	8
Number of fans in use,	17

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Scranton Coal Company,	731,922
Delaware, Lackawanna and Western Railroad Company,	719,039
Temple Coal Company,	472,914
Pennsylvania Coal Company,	290,278
Peoples Coal Company,	194,130
Scranton Electric Company,	67,693
Green Ridge Coal Company,	63,163
Delaware and Hudson Company,	39,528
Total,	2,578,667

Production by Counties

Lackawanna,	2,578,667

TABLE B.—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Total number of employes	Number of employes inside per fatal accident	Number of employes outside per fatal accident	Number of employes inside per non-fatal accident	Number of employes outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Scranton Coal Co.,	8	------	8	16	1	17	91,490	45,745	1,280	332	1,612	160	------	80	332
Delaware, Lackawanna and Western Railroad Co.,*	3	1	4	10	1	11	239,680	71,904	1,333	317	1,650	444	317	133	317
Temple Coal Co.,	5	------	5	1	------	1	94,583	472,914	545	168	713	109	------	545	------
Pennsylvania Coal Co.,	1	------	1	3	------	3	290,278	96,759	394	115	509	394	------	131	------
Peoples Coal Co.,	4	------	4	6	------	6	48,533	32,355	387	100	487	98	------	65	------
Miscellaneous Companies,	------	------	------	------	------	------	------	------	98	56	154	------	------	------	------
Totals and averages,	21	1	22	36	2	38	122,793	71,630	4,037	1,088	5,125	192	1,088	112	544

*Includes tonnage of Manville Colliery during months operated by Delaware and Hudson Co.

TABLE C.—Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of roof,	2	----	1	1	----	2	1	2	----	----	----	1	10	47.62
Mine cars,	----	----	----	----	1	----	----	1	----	----	----	----	2	9.52
Explosions of gas,	----	----	----	----	----	----	----	----	----	----	----	1	1	4.76
Suffocation by gas, etc.,	----	----	----	----	----	----	----	----	----	----	----	1	1	4.76
Explosions of powder and dynamite,	----	2	----	----	----	----	----	----	----	----	----	----	2	9.53
Blasts, premature and otherwise,	1	1	----	----	----	----	1	1	----	----	----	----	4	19.05
Struck by drum,	----	----	----	----	----	----	----	----	----	----	1	----	1	4.76
Totals,	3	3	1	1	1	2	2	4	----	----	1	3	21	100.00
Outside														
Cars,	----	----	----	----	----	----	----	----	1	----	----	----	1	100.00
Totals,	----	----	----	----	----	----	----	----	1	----	----	----	1	100.00
Grand totals,	3	3	1	1	1	2	2	4	1	----	1	3	22	----

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,	2	----	----	----	----	----	----	----	----	----	----	----	2	5.56
Falls of slate,	----	1	----	----	----	----	----	----	----	----	----	----	1	2.78
Falls of roof,	1	1	1	1	----	1	----	1	1	2	----	----	9	25.00
Mine cars,	2	----	2	1	1	1	1	----	----	1	1	1	11	30.55
Explosions of gas,	----	----	----	1	----	----	----	----	----	----	----	----	1	2.78
Explosions of powder and dynamite,	----	----	1	----	----	----	----	----	----	----	----	----	1	2.78
Blasts, premature and otherwise,	1	1	----	----	----	----	----	2	----	2	1	----	7	19.44
Mules,	----	----	----	----	----	----	----	----	1	1	----	----	2	5.55
Struck by hammer,	----	----	----	----	----	----	1	----	----	----	----	----	1	2.78
By falling,	----	----	----	----	----	----	----	----	----	1	----	----	1	2.78
Totals,	6	3	4	3	1	2	2	3	2	7	2	1	36	100.00
Outside														
Scalded by steam,	----	----	----	----	----	----	1	----	----	----	----	----	1	50.00
Scalded by hot water,	----	----	----	1	----	----	----	----	----	----	----	----	1	50.00
Totals,	----	----	----	1	----	----	1	----	----	----	----	----	2	100.00
Grand totals,	6	3	4	4	1	2	3	3	2	7	2	1	38	----

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,	2	2	1			1	1	2			1	1	11
Miners' laborers,	1	1		1		1	1	1				1	7
Drivers and runners,												1	1
Doorboys and helpers,								1					1
Companymen,					1								1
Totals,	3	3	1	1	1	2	2	4			1	3	21
Outside													
Runners,									1				1
Totals,									1				1
Grand totals,	3	3	1	1	1	2	2	4	1		1	3	22

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Assistant mine foremen,										1			1
Miners,	1	3	2	2	1	1	1	3	1	4	1		20
Miners' laborers,	2		1								1		4
Drivers and runners,	1		1			1	1		1	1		1	7
Motormen and assistants,	1												1
Timbermen and rockmen,				1						1			2
Footmen,	1												1
Totals,	6	3	4	3	1	2	2	3	2	7	2	1	36
Outside													
Foremen,							1						1
Laborers,				1									1
Totals,				1			1						2
Grand totals,	6	3	4	4	1	2	3	3	2	7	2	1	38

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,		1						1				1	3
Irish,								1					1
German,								1			1		2
Polish,	2		1		1		1						5
Italian,	1	2				1						1	5
Slavonian,									1				1
Lithuanian,						1							1
Austrian,							1	1					2
Russian,				1								1	2
Totals,	3	3	1	1	1	2	2	4	1		1	3	22

TABLE H.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,			1	1			1	1	1	2		1	8
English,	1			1						1			3
Welsh,	1										1		2
Scotch,										1			1
Irish,							1		1		1		3
German,								1					1
Polish,	2	2		1	1					1			7
Italian,	2						1			1			4
Slavonian,						2							2
Lithuanian,		1	2										3
Austrian,			1										1
Russian,				1									1
Swedish,								1		1			2
Totals,	6	3	4	4	1	2	3	3	2	7	2	1	38

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind or Opening				Gaseous or non-gaseous	Number and Types of Safety Lamps Used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Scranton Coal Co.										
Pine Brook Colliery:										
Pine Brook,	Lackawanna,	C or Clark,	84	318				Gaseous,	10	
		B or Dunmore No. 1	60							
		B or Dunmore No. 2	54							
		B or Dunmore No. 3	36							
Capouse Colliery:										
Capouse,	Lackawanna,	G or Diamond,	84	520				Gaseous,	6	
		F or Rock,	72					Gaseous,		
		E or Big,	168							
		D or New County,	34							
		C or Clark,	84							
		B or Dunmore No. 2	30							
		B or Dunmore No. 3	32							
Mt. Pleasant Colliery:										
Mt. Pleasant,	Lackawanna,	J or Olyphant,	90	552				Gaseous,	6	
		E or Five Foot,	54							
		E or Three Foot,	36							
		F or Rock,	96							
		D or New County,	108							
		C or Clark,	90							
		B or Dunmore No. 1	24							
		B or Dunmore No. 2	30							

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind or Opening: Shaft — Depth	Kind or Opening: Slope (Coal or Rock) — Length	Kind or Opening: Slope (Coal or Rock) — Average pitch—degrees	Kind or Opening: Drift	Gaseous or non-gaseous	Number and Types of Safety Lamps Used: Flame	Number and Types of Safety Lamps Used: Electric
Delaware, Lackawanna and Western Railroad Co.										
Hyde Park Colliery: Hyde Park,	Lackawanna,	E or Five Foot,		365	350	10		Gaseous,	24	
		G or Four Foot,								
		G or Diamond,								
		F or Rock,								
		B or Dunmore No. 1								
		B or Dunmore No. 3								
Brisbin Colliery: Brisbin,	Lackawanna,	H or Church,	60	521				Gaseous,	33	
		G or Four Foot,	48							
		G or Diamond,								
		E or Big,								
		E or 14 Foot,								
		E or New County								
Manville Colliery: Manville,	Lackawanna,	D or New County,		352				Gaseous,		
Temple Coal Co.										
Sterrick Creek Colliery: Sterrick Creek,	Lackawanna,	E or Grassy,	84					Gaseous,	6	
		D or New County,	36							
		C or Top Clark,	30							
		C or Bottom Clark,	60							
		B or Dunmore No. 2	24							
		B or Dunmore No. 3	72	513						
Pennsylvania Coal Co.										
Pennsylvania No. 5 Colliery: Pennsylvania,	Lackawanna,	C or Clark,	54					Non-gas.,		
		B or Dunmore No. 1	58					Gaseous,		
		B or Dunmore No. 2	59					Non-gas.,		
		B or Dunmore No. 3	47	293				Gaseous,		

Peoples Coal Co.										
		G or Five Foot,	63	366	1,200	15		Non-gas.,	2	
		G or Four Foot,	66							
Oxford Colliery:		G or Diamond,	124							
Oxford,	Lackawanna,	F or Rock,	78							
		E or Big,	159							
		D or New County,	100							
		C or Clark,	87							
Green Ridge Coal Co.		B or Dunmore Nos. 1, 2, 3	147							
Green Ridge Colliery:										
Green Ridge,	Lackawanna,	D or New County, B or Dunmore No. 3	48		800	14		Gaseous,		
Delaware and Hudson Co.										
Manville Colliery:										
Manville,*	Lackawanna,									

*Same as Manville under Delaware, Lackawanna and Western Railroad Co.

TABLE I—Continued.

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Scranton Coal Co.		C or Clark,	Guibal,	17.6	102	1.2	Steam,	185,500	205,800	178,600	13	675
		B or Dunmore No. 1										
Pine Brook Colliery:		B or Dunmore No. 2										
Pine Brook,	Lackawanna,	B or Dunmore No. 3										
Capouse Colliery:		G or Diamond,	Guibal,	20	75	1	Steam,	140,000	165,000	130,000	9	275
		F or Rock,	Guibal,	18	80							
Capouse,	Lackawanna,	E or Big,										
		D or New County,										
		C or Clark,										
		B or Dunmore No. 2										
		B or Dunmore No. 3										
Mt. Pleasant Colliery:		J or Olyphant,	Guibal,	20	60	.7	Steam,	161,410	171,250	151,560	11	212
		E or Five Foot,		12	80	.6						
		E or Three Foot,										
Mt. Pleasant,	Lackawanna,	F or Rock,										
		D or New County,										
		C or Clark,										
		B or Dunmore No. 1										
		B or Dunmore No. 2										
Delaware, Lackawanna and Western Railroad Co.												
Hyde Park Colliery:		E or Five Foot,	Guibal,	24	64	1.3	Steam,	215,000	218,000	110,000	10	64
		G or Four Foot,	Closed,	12	80	.6	Electricity,	92,000	94,500	58,000	5	
Hyde Park,	Lackawanna,	G or Diamond,										
		F or Rock,										
		B or Dunmore No. 1										
		B or Dunmore No. 3										

Brisbin Colliery:												
Brisbin,	Lackawanna,	H or Church, G or Four Foot, G or Diamond, E or Big, E or 14 Foot, E or New County	Jeffrey,	15	70	1.5	Steam,	172,813	210,344	121,977	7	500
Manville Colliery:												
Manville,	Lackawanna,	D or New County,	Guibal,	20 20	85 85	1.1 .6	Steam,	170,000	195,000	165,000	5	165
Temple Coal Co.												
Sterrick Creek Colliery:												
Sterrick Creek,	Lackawanna,	E or Grassy, D or New County, C or Top Clark, C or Bottom Clark, B or Dunmore No. 2 B or Dunmore No. 3	Guibal, Guibal, Buffalo,	20 25 10	75 65 180	1.3 .8 .8	Steam,	212,100	218,200	156,300	9	500
Pennsylvania Coal Co.												
Pennsylvania No. 5 Colliery:												
Pennsylvania,	Lackawanna,	C or Clark, B or Dunmore No. 1 B or Dunmore No. 2 B or Dunmore No. 3	Guibal, Guibal,	20 17	75 60	1.5 .4	Steam, Electricity,	56,400 59,740	43,750 53,020	66,100 59,800	5 6	105 106
Peoples Coal Co.												
Oxford Colliery:												
Oxford,	Lackawanna,	G or Five Foot, G or Four Foot, G or Diamond, F or Rock, E or Big, D or New County, C or Clark, B or Dunmore Nos. 1, 2, 3	Vulcan,	16	95	.7	Steam,	112,000	112,000	120,000	10	387
Green Ridge Coal Co.												
Green Ridge Colliery:												
Green Ridge,	Lackawanna,	D or New County, B or Dunmore No. 3	Guibal,	16	48	2.5	Steam,	90,540	71,220	90,000	9	166
Delaware and Hudson Co.												
Manville Colliery:												
Manville,*	Lackawanna,											

*Same as Manville under Delaware, Lackawanna and Western Railroad Co.

TABLE J.—Operators and mines, name of coal bed, kind of openings, mining machines used and approximate number of tons produced by machines

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of opening	Gaseous or non-gaseous	Mining Machines		Approximate number of tons produced by machines
						Electric	Compressed air	
Delaware, Lackawanna and Western Railroad Co.								
Hyde Park,	Lackawanna,	G or Five Foot,		Slope,	Gaseous,	4		71,284
		B or Dunmore No. 1,		Shaft,	Gaseous,	1		3,428
Brisbin,	Lackawanna,	B or Dunmore No. 3,		Shaft,	Gaseous,	3		19,232
		H or Church,		Shaft,	Gaseous,	4		37,635
Totals,						12		131,579
Temple Coal Co.								
Sterrick Creek,	Lackawanna,	E or Grassy,	84	Shaft,	Gaseous,	1		28,603
Pennsylvania Coal Co.								
Pennsylvania No. 5,	Lackawanna,	B or Dunmore No. 1,	30	Shaft,	Gaseous,	3		22,139
		B or Dunmore No. 3,	72	Shaft,	Non-gas.,	2		23,680
Totals,						5		45,819
Grand totals,						18		206,001

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	General Superintendent	Postoffice	Superintendent	Postoffice	Railroad to Mine
Scranton Coal Co. Pine Brook, Capouse, Mt. Pleasant,	Lackawanna,	Daniel Young, Sr.,	Scranton,	J. F. Cummings,	Scranton,	N. Y. O. and W.
Delaware, Lackawanna and Western Railroad Co. Hyde Park, Brisbin, Manville, Washeries Hyde Park, Brisbin,	Lackawanna,	W. W. Inglis,	Scranton,	H. E. Harris, S. J. Jennings, S. J. Jennings, H. E. Harris,	Scranton, Scranton, Scranton, Scranton,	D. L. and W.
Temple Coal Co. Sterrick Creek,	Lackawanna,	F. H. Hemelright,	Scranton,	Joseph Reese,	Olyphant,	Erie
Pennsylvania Coal Co. Pennsylvania No. 5,	Lackawanna,	Joseph P. Jennings,	Scranton,	H. E. Yewens,	Scranton,	Erie
Peoples Coal Co. Oxford,	Lackawanna,	William McLaughlin,	Scranton,			D. L. and W.
Scranton Electric Co. Economy Washery,	Lackawanna,	D. T. Campbell,	Scranton,	John A. Fritz,	Scranton,	Delaware and Hudson
Green Ridge Coal Co. Green Ridge,	Lackawanna,	W. L. Connell,	Scranton,	W. L. Connell,	Scranton,	Erie and D. and H.
Delaware and Hudson Co. Manville, *	Lackawanna,	Cadwalder Evans, Jr.	Scranton,	Edward McGlynn,	Scranton,	Delaware and Hudson

*Operated each alternate month with the D. L. and W. R. R. Co.

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives: Pounds of black powder used	Explosives: Pounds of dynamite used	Explosives: Pounds of permissible explosives used
Scranton Coal Co.												
Pine Brook,	Lackawanna,	359,239	34,731	4,767	398,737	191	837	1	11	523,125	22,050	
Capouse,		147,741	24,615	2,246	174,602	173	410	4	3	155,000	4,400	
Mt. Pleasant,		134,392	22,257	1,934	158,583	181	365	3	3	176,700	10,425	
Totals,		641,372	81,603	8,947	731,922	------	1,612	8	17	854,825	36,875	
Delaware, Lackawanna and Western Railroad Co.												
Hyde Park,	Lackawanna,	294,557	35	32,100	326,692	273	789	3	5	497,150	41,525	
Brisbin,		169,388	18,337	12,628	200 353	275	567	----	3	206,825	14,013	3,694
Manville,		29,132	8,707	846	38,685	109	232	1	3	566	40	
		493,077	27,079	45,574	565,730	------	1,558	4	11	704,541	45,578	3,694
Washeries												
Hyde Park,		73,119	----------	----------	73,119	201	27	----	----	----------	----------	----------
Brisbin,		80,190	----------	----------	80,190	239	35	----	----	----------	----------	----------
		153,309	----------	----------	153,309	------	62	----	----	----------	----------	----------
Totals,		646,386	27,079	45,574	719,039	------	1,650	4	11	704,541	45,578	3,694
Temple Coal Co.												
Sterrick Creek,	Lackawanna,	439,609	26,768	6,537	472,914	237	713	5	1	232,650	27,900	

Pennsylvania Coal Co. Pennsylvania No. 5,	Lackawanna,	266,960	11,546	11,772	290,278	304	509	1	3	225,075		11,636
Peoples Coal Co. Oxford,	Lackawanna,	115,044	10,989	68,097	194,130	250	487	4	6	15,500	4,800	3,500
Scranton Electric Co. Economy Washery,	Lackawanna,	67,693			67,693	308	10					
Green Ridge Coal Co. Green Ridge,	Lackawanna,	34,345	4,758	24,060	63,163	131	144			1,323	3,500	
Delaware and Hudson Co. Manville,*	Lackawanna,	30,519	8,439	570	39,528	118	*					
Grand totals,		2,241,928	171,182	165,557	2,578,667		5,125	22	38	2,033,914	118,653	18,830

*Included with D. L. & W. Railroad Co., as this colliery is worked every alternate month by the Delaware and Hudson Co., and Delaware, Lackawanna and Western Railroad Co.

TABLE 2.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Names of Operators	County	Power Plant										Pumps				Haulage					Air Compressors	
		Boilers				Engines										Locomotives						
		Cylindrical		Tubular		Steam Engines (All Classes)		Internal Combustion Engines (Gas)		Electric Dynamos (All Classes)		Number	Total capacity in gallons per minute	Pumps Delivering Water to the Surface		Number of horses and mules	Gasoline	Steam	Air	Electric	Number	Total capacity cubic feet per minute
		Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total kilowatts			Number	Approximate number of gallons per minute							
Scranton Coal Co.,	Lackawanna,	12	180	19	3,095	44	3,900			4	437	34	13,374	12	9,350	239		1		8	4	1,499
Delaware, Lackawanna and Western Railroad Co.,				9	2,150	18	750					19	5,200	7	2,600	82				18		
Temple Coal Co.,				8	1,800	27	2,770			4	370	16	10,400	3	2,200			2		4	2	4,150
Pennsylvania Coal Co.,				6	900	12	880			3	505	10	2,600	2	900	25				11		
Peoples Coal Co.,				5	1,500	14	850			4	297	3	1,575	3	775	42				3	2	350
Green Ridge Coal Co.,				6	750	8	710			1	50	3	1,800			21						
Totals,		12	180	53	10,195	123	9,860			16	1,659	85	34,949	27	15,825	409		3		44	8	5,999

TABLE 3.—Part 1.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside															Total inside	Outside											Total outside	Grand total inside and outside
		Mine foremen	Assistant mine foremen	Fire bosses	Miners	Miner's laborers	Machine miners	Machine runners and scrapers	Drivers and runners	Motormen and assistants	Doorboys and helpers	Trackmen and brattiemen	Timbermen and rockmen	Pumpmen and pipemen	Electricians and helpers	All other employes		Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Machinists and helpers	Trackmen and helpers	Slate pickers (boys)	Slate pickers (men)	Office employes	All other employes			
Scranton Coal Co.	Lackawanna,	3	4	11	433	302	----	----	255	12	31	36	30	20	3	140	1,280	--	3	24	44	3	1	64	40	4	149	332	1,612
Delaware, Lackawanna and Western Railroad Co.,*		3	19	----	448	486	5	14	48	55	28	30	44	9	8	136	1,333	2	4	12	34	3	----	62	10	12	178	317	1,650
Temple Coal Co.,		2	5	4	161	207	----	----	65	23	6	32	8	3	----	29	545	1	1	11	17	13	6	----	22	4	93	168	713
Pennsylvania Coal Co.,		1	5	1	127	111	12	6	10	22	2	18	10	3	5	61	394	--	1	10	6	1	----	23	8	1	65	115	509
Peoples Coal Co.,		3	4	2	100	95	----	----	42	6	8	18	50	5	6	48	387	1	2	6	9	3	2	46	3	6	22	100	487
Scranton Electric Co.,																			1								9	10	10
Green Ridge Coal Co.,		1	----	1	39	40	----	----	7	----	----	----	4	2	----	4	98	1	1	6	7	1	----	6	3	2	19	46	144
Totals,		13	37	19	1,308	1,241	17	20	427	118	75	134	146	42	22	418	4,037	5	13	69	117	24	9	201	86	29	535	1,088	5,125

*Including employes of Delaware and Hudson Co.

TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Total
Scranton Coal Co.,	Lackawanna,	16	16	14	14	14	15	15	17	16	14	16	15	182
Delaware, Lackawanna and Western Railroad Co.,		15	19	16	12	16	21	17	25	17	22	16	23	219
Temple Coal Co.,		20	21	21	9	19	21	21	23	22	22	19	19	237
Pennsylvania Coal Co.,		25	24	27	26	27	25	25	27	25	24	25	24	304
Peoples Coal Co.,		22	22	24	22	21	21	19	21	19	19	20	200	250
Scranton Electric Co.,		25	25	27	25	26	26	25	27	26	26	25	25	308
Green Ridge Coal Co.,		12	12	13	9	11	11	11	9	11	10	11	11	131
Delaware and Hudson Co.,		11	-----	19	-----	19	-----	21	-----	21	-----	22	-----	113

TABLE 4.—Fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 15	Edward Bonaskie,	Polish,	Miner,	45	M.	1	5	Sterrick Creek,	Lackawanna,	Killed by fall of roof on pillar work.
26	Peter Just,	Italian,	Laborer,	35	M.	1		Oxford,		Fatally injured by fall of roof at face of chamber.
27	Anthony Patch,	Polish,	Miner,	49	M.	1	3	Oxford,		Killed by explosion of blast in chamber. The miner in adjoining chamber failed to warn Patch that he was going to fire.
Feb. 1	Chester Manchune,	Italian,	Miner,	29	M.	1		Sterrick Creek,		Killed by explosion of powder in chamber.
	Eugene Bachmella,	Italian,	Laborer,	31	M.	1		Sterrick Creek,		Killed by explosion of powder in chamber.
26	Henry Pilger,	American,	Miner,	41	M.	1		Pennsylvania No. 5		Killed by explosion of blast at face of chamber.
Mar. 16	Peter Kousenka,	Polish,	Miner,	42	S.			Hyde Park,		Killed by fall of roof at face of chamber.
April 20	Theodore Sczoir,	Russian,	Laborer,	32	S.			Pine Brook,		Killed by fall of roof at face of chamber.
May 19	Andrew Pedro,	Polish,	Campanyman,	24	S.			Oxford,		Killed by cars on gangway.
June 16	Luke Powellette,	Italian,	Miner,	47	M.	1		Sterrick Creek,		Killed by fall of roof in chamber.
26	Michael Shusk,	Lithuanian,	Laborer,	35	S.			Capouse,		Killed by fall of roof at face of chamber.
July 1	Peter Vwaenuk,	Austrian,	Laborer,	30	M.	1	3	Mt. Pleasant,		Killed by fall of roof at face of chamber.
13	Charles Slack,	Polish,	Miner,	42	M.	1	3	Capouse,		Killed by explosion of blast in chamber.
Aug. 14	William Pressell,	German,	Miner,	53	M.	1		Capouse,		Killed by fall of roof at face of chamber.
17	David S. Williams,	American,	Miner,	47	M.	1		Capouse,		Killed by explosion of blast at face of chamber.
	John Granville,	Irish,	Doortender,	58	M.	1		Oxford,		Killed by cars on gangway.
21	Alex Barna,	Austrian,	Laborer,	30	M.	1	1	Manville,		Killed by fall of roof at face of chamber.
Sept. 20	George Como,	Slavonian,	Runner,	44	M.	1	1	Hyde Park,		Killed by cars under breaker. Outside.
Nov. 9	George Lecherman,	German,	Miner,	69	M.	1		Hyde Park,		Killed by a drum on gangway.
Dec. 11	Alex Checkroney,	Italian,	Laborer,	26	S.			Sterrick Creek,		Killed by fall of roof at face.
16	Harry Shawnskie,	Russian,	Miner,	34	M.	1	3	Mt. Pleasant,		Killed by explosion of gas in old chamber.
	Daniel Thomas,	American,	Runner,	28	M.	1		Mt. Pleasant,		Suffocated by afterdamp while trying to save Harry Shawnskie.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 4	Frank Nesto,	Italian,	Laborer,	29	S.	Oxford,		Leg fractured by fall of coal in chamber.
12	John Leasher,	English,	Footman,	29	M.	Oxford,		Toe fractured by fall of coal at face of chamber.
25	David Evans,	Welsh,	Driver,	17	S.	Pine Brook,		Foot lacerated by cars on gangway.
26	Sebastian Paerro,	Italian,	Miner,	37	M.	Oxford,		Abdomen squeezed by fall of roof at face of chamber.
27	Scrapan Dianna,	Polish,	Laborer,	27	M.	Oxford,		Leg fractured by explosion of blast in chamber.
29	Michael Aroloskie,	Polish,	Brakeman,	24	S.	Pine Brook,		Ankle injured by cars on gangway.
Feb. 10	Ignatz Stanchiskie,	Polish,	Miner,	34	M.	Pennsylvania No. 5,		Back broken by fall of slate at face of chamber.
24	Walter Bestey,	Lithuanian,	Miner,	39	M.	Pine Brook,		Skull fractured by explosion of blast in chamber.
25	John Saffol,	Polish,	Miner,	29	M.	Pine Brook,		Back injured by fall of roof at face of chamber.
Mar. 3	Albert Spoukey,	Lithuanian,	Runner,	32	M.	Capouse,	Lackawanna,	Leg fractured by cars on gangway.
13	Patrick Tobin,	American,	Miner,	48	M.	Hyde Park,		Back injured by fall of roof at face of chamber.
24	Joseph Sabolefski,	Lithuanian,	Miner,	34	M.	Manville,		Face burned by explosion of powder in chamber.
30	Charles Sisentine,	Austrian,	Laborer,	27	M.	Brisbin,		Back injured by cars in chamber.
April 4	Frank Hughes,	American,	Laborer,	26	M.	Brisbin,		Foot burned by stepping in boiling water near washhouse. Outside.
	Wassil Adupeck,	Russian,	Miner,	43	M.	Capouse,		Hand crushed by cars in chamber.
5	George George,	English,	Rockman,	36	M.	Pine Brook,		Head and hands burned by explosion of gas at face of tunnel.
18	Andrew P. Bovozak,	Polish,	Miner,	26	M.	Pine Brook,		Chest injured by fall of roof at face of chamber.
May 22	Frank Bolseikie,	Polish,	Miner,	30	S.	Mt. Pleasant,		Leg fractured by cars on gangway.
June 22	George Washlefski,	Slavonian,	Runner,	26	S.	Sterrick Creek,		Foot lacerated by cars on gangway.
28	Peter Bosozak,	Slavonian,	Miner,	26	M.	Pine Brook,		Leg fractured by fall of roof at face of chamber.
July 17	Salvatore Calera	Italian,	Miner,	26	M.	Mt. Pleasant,		Back injured. Struck by a hammer in chamber.

July	17	Martin Farrell,	American,	Driver,	19	M.	Mt. Pleasant,			Finger crushed by cars on gangway.
	25	John Hopkins,	Irish,	Foreman,	28	M.	Capouse,			Arm scalded by steam. Outside.
Aug.	3	Charles Canterberry,	American,	Miner,	39	M.	Hyde Park,			Back injured by explosion of blast in chamber.
	10	Phillip Martin,	German,	Miner,	62	M.	Pine Brook,			Head injured by explosion of blast at face of chamber.
	15	Andrew Wickland,	Swedish,	Miner,	48	M.	Hyde Park,			Ankle injured by fall of roof at face of chamber.
Sept.	4	Martin Faraghan,	Irish,	Miner,	46	M.	Pennsylvania No. 5,			Back injured by fall of roof at face of chamber.
	11	James McCann,	American,	Runner,	34	S.	Manville,			Leg injured. Kicked by a mule.
Oct.	3	John Farbo,	Italian,	Miner,	38	M.	Oxford,			Eye injured by fall of roof at face of chamber.
	14	Thomas Ragean,	American,	Driver,	34	M.	Oxford,	Lackawanna,		Kicked in the stomach by a mule.
	16	Charles Wallerleski,	Polish,	Miner,	44	M.	Pine Brook,			Back injured by explosion of blast at face of chamber.
	17	John Collins,	Scotch,	Miner,	59	M.	Manville,			Back injured by explosion of blast at face of chamber.
		Michael Heffron,	American,	Timberman,	36	M.	Hyde Park,			Arm fractured by falling on gangway.
	20	John S. Cole,	English,	Assistant foreman,	44	M.	Pine Brook,			Finger crushed by cars on gangway.
	28	John Ericson,	Swedish,	Miner,	29	S.	Hyde Park,			Eye injured by fall of roof in chamber.
Nov.	20	John Malia,	Irish,	Laborer,	48	M.	Pennsylvania No. 5,			Hip dislocated by cars on gangway.
	25	Thomas Williams,	Welsh,	Miner,	51	M.	Brisbin,			Face and arms lacerated by explosion of blast at face of chamber.
Dec.	1	John Cusick,	American,	Runner,	20	S.	Pine Brook,			Foot bruised by cars in chamber.

CONDITION OF COLLIERIES

SCRANTON COAL COMPANY

Pine Creek, Capouse and Mt. Pleasant Collieries.—Ventilation, drainage and condition as to safety, good.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Hyde Park, Brisbin and Manville Collieries.—Ventilation, drainage and condition as to safety, good.

TEMPLE COAL COMPANY

Sterrick Creek Colliery.—Ventilation, drainage and condition as to safety, good.

PENNSYLVANIA COAL COMPANY

Pennsylvania No. 5 Colliery.—Ventilation, drainage and condition as to safety, good.

PEOPLES COAL COMPANY

Oxford Colliery.—Ventilation, drainage and condition as to safety, good.

GREEN RIDGE COAL COMPANY

Green Ridge Colliery.—Ventilation, drainage and condition as to safety, good.

DELAWARE AND HUDSON COMPANY

Manville Colliery.—Same as Manville under Delaware, Lackawanna and Western Railroad Company.

IMPROVEMENTS

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Hyde Park Colliery.—Completed tunnel from "E" gangway, Clark vein, to No. 1 Dunmore vein. Driven from "B" gangway, No. 1 to No. 3 Dunmore vein, length, 250 feet; rock plane 15 Degrees pitch from Bottom split of Four Foot to Five Foot vein, length 186 feet.

Lined a bore hole with 6-inch pipe.

Installed 4 coal-cutting machines; one 7-ton locomotive for Rock and Diamond veins and a 10-ton locomotive for the Four Foot vein.

Outside:—Erected a new office building.

Brisbin Colliery.—Installed five turbine driven blowers.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in Scranton, June 6 and 7. The Board of Examiners was composed of Jenkin

T. Reese, Mine Inspector; Joseph P. Jennings, Superintendent, Moosic; James W. Reese, Miner, Scranton; and William J. Jenkins, Miner, Scranton.

The following persons passed a satisfactory examination and were granted certificates:

MINE FOREMEN

John H. Ballamy, John Clark, James W. David, Oliver Davis, William T. Davies, Joseph Dean, George A. Dickerson, Arthur O. Evans, Griffith I. Evans, Henry Lumley, John H. Gleason, Edward Hopkins, Arthur Jones, Karl Miller, Joseph E. Mulrooney, Edward M. Owens, Reynolds Pearce, Griffiths Richards, Thomas F. Sheridan, Charles A. Shimer, Oscar W. Shimer, Harvey N. Smith, Henry Smith, David S. Thomas, Hubert G. Thomas, John M. Weeks, Arthur E. Williams, David A. Williams, Scranton; James Bell, Patrick J. McLearn, William Patton, Joseph Pearce, Thomas Reid, Olyphant; Walter D. Evans, Daniel Webster Swallow, Clarks Green; Daniel H. James, Minooka; Roger D. Leach, Dalton; Joseph G. Mattie, Dunmore; Harold Norton, Clarks Summit; William Simpson, Dickson City; George Tinsley, Blakely.

ASSISTANT MINE FOREMAN

Hayden E. Jenkins, Scranton.

FIFTH DISTRICT

LACKAWANNA COUNTY

Scranton, Pa., February 20, 1917.

Hon. James E. Roderick, Chief of Department of Mines:

Sir:—I have the honor to transmit herewith my report as Inspector of Mines for the Fifth Anthracite District, for the year ending December 31, 1916.

Respectfully submitted,

S. J. PHILLIPS,
Inspector.

SUMMARY OF STATISTICS

Number of collieries,	12
Number of mines,	27
Number of mines in operation,	27
Number of gaseous mines in operation,	19
Number of non-gaseous mines in operation,	8
Number of tons of coal shipped to market,	2,875,875
Number of tons used at mines for steam and heat,	99,104
Number of tons sold to local trade and used by employes,	68,060
Number of tons produced,	3,043,039
Number of tons produced by electrical machines,	377,010
Number of persons employed inside of mines,	5,175
Number of persons employed outside,	1,386
Number of persons employed inside between 16 and 21 years,	265
Number of persons employed outside between 14 and 21 years,	310
Number of fatal accidents inside,	7
Number of fatal accidents outside,	2
Number of non-fatal accidents inside,	84
Number of non-fatal accidents outside,	6
Number of tons of coal produced per fatal accident inside,	434,720
Number of tons produced per fatal accident inside and outside,	338,115
Number of persons employed per fatal accident inside,	739
Number of persons employed per fatal accident outside,	693
Number of persons employed per fatal accident inside and outside,	729
Number of persons employed per non-fatal accident inside,	61
Number of persons employed per non-fatal accident outside,	231
Number of persons employed per non-fatal accident inside and outside,	73
Number of wives made widows,	8
Number of children made orphans,	23
Number of steam locomotives outside,	7
Number of compressed air locomotives inside,	1
Number of electric motors inside,	108
Number of electric motors outside,	2
Number of cylindrical boilers,	19
Number of tubular boilers,	38
Number of steam engines of all classes,	125
Number of internal combustion engines (gas),	16
Number of electric dynamos,	5
Number of pumps of all classes,	45
Number of pumps delivering water to surface,	28
Number of air compressors,	12
Number of fans in use,	18

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Delaware, Lackawanna and Western Railroad Company,	2,573,029
Delaware and Hudson Company,	274,710
South Side Coal Company,	55,778
Scranton Anthracite Coal Company,	53,759
Meadow Hill Coal Company,	26,843
Spruks Coal Company,	23,563
John Gibbons and Company,	18,219
Minooka Coal Company,	17,138
Total,	3,043,039

Production by Counties

Lackawanna,	3,043,039

P. B.--Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Total number of employes	Number of employes inside per fatal accident	Number of employes outside per fatal accident	Number of employes inside per non-fatal accident	Number of employes outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Delaware, Lackawanna and Western Railroad Co.,	6	2	8	74	4	78	428,838	34,771	4,394	960	5,354	732	480	59	240
Delaware and Hudson Co.,				8	1	9		34,338	606	267	873			76	267
Scranton Anthracite Coal Co.,	1		1	1		1	53,759	53,759	65	27	92	65		65	
John Gibbons and Co.,				1		1		18,219	54	24	78			54	
Minooka Coal Co.,					1	1			28	8	36				8
Miscellaneous Companies,									28	100	128				
Totals and averages,	7	2	9	84	6	90	434,720	36,227	5,175	1,386	6,561	739	693	61	231

TABLE C.—Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,	1												1	14.29
Falls of roof,	1								1			1	3	42.86
Explosions of gas,						1							1	14.28
Blasts, premature and otherwise,			1							1			2	28.57
Totals,	2		1			1			1	1		1	7	100.00
Outside														
Cars,										1			1	50.00
Struck by rope,				1									1	50.00
Totals,				1						1			2	100.00
Grand totals,	2		1	1		1			1	2		1	9	

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,	1									1			2	2.38
Falls of roof,	4	1	1	3	1	4			3	2	4	2	25	29.76
Mine cars,	1	4	1	2	2	2	1		5	2	4	1	25	29.76
Explosions of gas,						1					1		2	2.38
Blasts, premature and otherwise,		2	2					4	2	1	2	1	14	16.67
Bailing water,												1	1	1.19
Struck by door,								1					1	1.19
Mules,	1	1											2	2.38
Machinery,		1											1	1.19
Struck by piece of coal,				2	1			1			1		5	5.96
Struck by cage,			1	1									2	2.38
Struck by bar,		1											1	1.19
By falling,	2										1		3	3.57
Totals,	9	10	5	8	4	7	1	6	10	6	13	5	84	100.00
Outside														
By falling,		1						1	1		1		4	66.66
Rusty nail,			1										1	16.67
Struck by wagon,						1							1	16.67
Totals,		1	1			1		1	1		1		6	100.00
Grand totals,	9	11	6	8	4	8	1	7	11	6	14	5	90	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,	1	----	1	----	----	1	----	----	1	1	----	1	6
Miners' laborers,	1	----	----	----	----	----	----	----	----	----	----	----	1
Totals,	2	----	1	----	----	1	----	----	1	1	----	1	7
Outside													
Trackman and helpers,	----	----	----	1	----	----	----	----	----	----	----	----	1
Laborers,	----	----	----	----	----	----	----	----	----	1	----	----	1
Totals,	----	----	----	1	----	----	----	----	----	1	----	----	2
Grand totals,	2	----	1	1	----	1	----	----	1	2	----	1	9

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,	4	3	----	5	3	3	----	3	4	2	7	2	36
Miners' laborers,	5	2	3	----	----	3	1	2	1	2	2	2	23
Machine runners and scrapers,	----	1	----	----	----	1	----	----	----	----	----	----	2
Drivers and runners,	----	3	----	----	1	----	----	----	1	1	2	----	8
Motormen and assistants,	----	----	----	1	----	----	----	----	4	1	1	----	7
Footmen,	----	1	2	----	----	----	----	1	----	----	----	1	5
Electricians and helpers,	----	----	----	1	----	----	----	----	----	----	----	----	1
Companymen,	----	----	----	1	----	----	----	----	----	----	1	----	2
Totals,	9	10	5	8	4	7	1	6	10	6	13	5	84
Outside													
Laborers,	----	1	----	----	----	----	----	----	----	----	1	----	2
Pump runners,	----	----	1	----	----	----	----	----	----	----	----	----	1
Teamsters,	----	----	----	----	----	1	----	----	----	----	----	----	1
Headmen,	----	----	----	----	----	----	----	----	1	----	----	----	1
Slatepickers (boys),	----	----	----	----	----	----	----	1	----	----	----	----	1
Totals,	----	1	1	----	----	1	----	1	1	----	1	----	6
Grand totals,	9	11	6	8	4	8	1	7	11	6	14	5	90

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,										1		1	2
Irish,									1				1
Polish,	2		1	1		1				1			6
Totals,	2		1	1		1			1	2			9

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	3	3	1	1	1	1		2	6	1	6	2	27
English,										1			1
Welsh,	1	1	1	1							2	1	7
Irish,		1	1	1							1		4
German,						2							2
Polish,	4	5	3	3	3	4	1	3	3	4	4	2	39
Italian,								1	1		1		3
Slavonian,						1			1				2
Lithuanian,				1									1
Austrian,	1												1
Russian,		1		1				1					3
Totals,	9	11	6	8	4	8	1	7	11	6	14	5	90

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and types of safety lamps used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Delaware, Lackawanna and Western Railroad Co.										
Bellevue Colliery:										
		B or Dunmore No. 1,	98					Gaseous,	15	
		B or Dunmore No. 2,	56					Gaseous,	6	
		B or Dunmore No. 3,	60	460				Gaseous,		
Bellevue,	Lackawanna,	E or Big Vein,	154					Gaseous,	14	
		D or New County,	123					Gaseous,	6	
		C or Clark,	114					Gaseous,	2	
		F or Rock,	84		550	11.5		Gaseous,	2	
		G or Diamond,	144							
Dodge Colliery:										
		H or Four Foot	30		270	10		Non-gas.,		
		G or Top Diamond,	33					Gaseous,	30	
Dodge,	Lackawanna,	G or Bot. Diamond,	78					Gaseous,	8	
		F or Rock,	84	500				Gaseous,		
		E or Big,	154							
		D or New County,	89							
		B or Dunmore No. 2,	56							
Sloan Colliery:										
Sloan,	Lackawanna,	E or Five Foot,	48		130			Gaseous,	14	
		D or Four Foot,	27		230			Gaseous,		
Central,	Lackawanna,	B or Dunmore No. 2,	42	750				Gaseous,		
		B or Dunmore No. 3,	24		200			Gaseous,		

Archbald Colliery:										
Archbald,	Lackawanna,	H or Four Foot,	24	356	530	15	200	Gaseous,		
		G or Diamond,	30							
		F or Rock,	84							
		E or Big,	96							
		D or New County,	64							
		C or Clark,	99							
Continental Colliery:										
Continental,	Lackawanna,	G or Diamond,	72	365				Gaseous,		
		F or Rock,	87							
		E or Big,	96							
		D or New County,	52							
		C or Clark,	76							
		B or Dunmore No. 1,	24							
		B or Dunmore No. 3,	30							
Holden Colliery:										
Holden,	Lackawanna,	G or Diamond,	34	352				Gaseous,	8	
		F or Rock,	84							
		E or Big,	90							
		D or New County,	65							
		C or Clark,	99							
		B or Dunmore,	30							
National Colliery:										
National,	Lackawanna,	G or Diamond,	34	240	575	15	Drift,	Gaseous,	8	
		F or Rock,	84							
		E or Big,	84							
		D or New County,	90					Non-gas.,	2	
		C or Clark,	30							
		B or Dunmore,	48							
Delaware and Hudson Co. Greenwood Colliery:										
New No. 1,	Lackawanna,	D or Checker,	37	232			Drift,	Gaseous,		
Old No. 1,		B or Dunmore No. 2,	28					Non-gas.,		
Number 1 and 2,		B or Dunmore No. 3,	35					Non-gas.,		
Number 1 and 2,		D or Checker,	37					Non-gas.,		
Number 8,		B or Dunmore No. 2,	28				Drift,	Non gas.,		
Number 11,		B or Dunmore No. 3,	35	201			Drift,	Non-gas.,		
Greenwood No. 2,	Lackawanna,	D or Checker,	38	190	1,700	5	Drift,	Gaseous,		
Greenwood No. 16,								Non-gas.,		
Scranton Anthracite Coal Co. Oak Hill Colliery:										
Oak Hill,	Lackawanna,	C or Clark,	42				Drift,	Non-gas.,		

TABLE I—Continued.

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and types of safety lamps used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Spruks Coal Co. East Mountain Colliery: East Mountain,	Lackawanna,	(B or Dunmore No. 2) (B or Dunmore No. 1)	72				Drift,	Non-gas.,		
John Gibbons and Co. Carleton Colliery: Carleton,	Lackawanna,	B or Dunmore Nos. 1 and 2.	60		100	7		Non-gas.,	1	
Minooka Coal Co. Minooka Colliery: Minooka,	Lackawanna,	B or Dunmore Nos. 1 and 2.	60		100	6		Non-gas.,		

TABLE I—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Delaware, Lackawanna and Western Railroad Co.												
Bellevue Colliery:												
		B or Dunmore No. 1,						35,700	37,710	32,630		
		B or Dunmore No. 2,						63,025	67,100	60,015	9	473
		B or Dunmore No. 3,	Duville,	14	120	1	Steam,	37,690	39,705	35,910		
Bellevue,	Lackawanna,	E or Big Vein,	Vulcan,	18	82	2	Steam,	*	17,700	*		
		D or New County,	Jeffrey,	16	85	2	Steam,	68,500	81,800	81,250	10	315
		C or Clark,						95,150	78,450	81,250		
		F or Rock,										
		G or Diamond,						59,695	65,650	49,480	3	94
Dodge Colliery:												
		H or Four Foot										
		G or Top Diamond,										
		G or Bot. Diamond,	Jeffrey,	15	56	.6	Steam,	27,690	23,290	23,290	2	
Dodge,	Lackawanna,	F or Rock,	Vulcan,	25	58	1.4	Steam,	160,645	126,750	126,750	8	562
		E or Big,										
		D or New County,										
		B or Dunmore No. 2,										
Sloan Colliery:												
Sloan,	Lackawanna,	E or Five Foot,	Guibal,	24	70	2	Steam,	92,870	100,100		3	155
		D or Four Foot,						17,110	16,880	100,000	1	48
Central,	Lackawanna,	B Dunmore No. 2,	Guibal,	24	70	2.2	Steam,	172,610	178,810		6	332
		B Dunmore No. 3,						1,652	1,549		1	40

*Scattered.

TABLE I—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Archbald Colliery:												
Archbald,	Lackawanna,	H or Four Foot, G or Diamond, F or Rock, E or Big, D or New County, C or Clark,	Guibal,	24	66	1.8	Steam,	247,560	248,610		15	695
Continental Colliery:												
Continental,	Lackawanna,	G or Diamond, F or Rock, E or Big, D or New County, C or Clark, B or Dunmore No. 1, B or Dunmore No. 3,	Guibal,	24	67	2	Steam,	184,175	206,000		10	439
Holden Colliery:												
Holden,	Lackawanna,	G or Diamond, F or Rock, E or Big, D or New County, C or Clark, B or Dunmore,	Guibal, Guibal,	25 17	56 67	1.1 1	Steam,	192,354	272,788	180,176	7	304

National Colliery:												
National,	Lackawanna,	G or Diamond,	Guibal,	25	60	1.5	Steam,	115,275	124,845	96,605	10	493
		F or Rock,	Guibal,	8	80	.5	Electricity,	17,800	18,200	16,000	1	110
		E or Big,										
		D or New County,										
		C or Clark,										
		B or Dunmore,										
Delaware and Hudson Co.												
Greenwood Colliery:												
New No. 1,	Lackawanna,	D or Checker,	Guibal,	17	75	.6	Steam,	15,700	16,600	14,500		
Old No. 1,		B or Dunmore No. 2,					Natural,	15,500	17,500	14,800		
Number 1 and 2,		B or Dunmore No. 3,					Natural,	14,700	15,600	13,800		
Number 1 and 2,		D or Checker,	Guibal,	14	75	.5	Steam,	14,400	15,400	13,300		
Number 8,		B or Dunmore No. 2,					Natural,	16,600	17,500	15,600		
Number 11,		B or Dunmore No. 3,					Natural,	9,000	9,200	8,500		
Greenwood No. 2,	Lackawanna,	D or Checker,	Guibal,	17	130	.3	Steam,	11,820	13,840	9,980		
Greenwood No. 16,			Guibal,	11	70	.3	Steam,	18,200	20,160	14,700		
Scranton Anthracite Coal Co.												
Oak Hill Colliery:												
Oak Hill,	Lackawanna,	C or Clark,	Guibal,	6	150	1.1	Steam,	20,000	23,000	18,000	2	65
Spruks Coal Co.												
East Mountain Colliery:												
East Mountain,	Lackawanna,	B or Dunmore No. 2 / B or Dunmore No. 1					Natural,	6,000	7,000	3,000	1	28
John Gibbons and Co.												
Carleton Colliery:												
Carleton,	Lackawanna,	B or Dunmore No. 1, 2.					Natural,	5,767	10,249	6,372	1	55
Minooka Coal Co.												
Minooka Colliery:												
Minooka,	Lackawanna,	B or Dunmore No. 1, 2.					Natural,	15,341	14,160	16,000		28

TABLE J.—Operators and mines, name of coal bed, kind of openings, mining machines used and approximate number of tons produced by machines

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of opening	Gaseous or non-gaseous	Mining Machines		Approximate number of tons produced by machines
						Electric	Compressed air	
Delaware, Lackawanna and Western Railroad Co.								
Bellevue,	Lackawanna,	B or Dunmore No. 1,	98	Shaft,	Gaseous,	5		89,879
		B or Dunmore No. 3,	60	Shaft,	Gaseous,	6		117,763
		H or Four Foot,	30	Slope,	Non-gas.,	3		53,229
Dodge,	Lackawanna,	G or Top Diamond,	33	Shaft,	Gaseous,	1		28,431
		G or Bottom Diamond,	78	Shaft,	Gaseous,	1		7,881
Sloan,	Lackawanna,	B or Dunmore,	42	Shaft,	Gaseous,	4		37,537
Archbald,	Lackawanna,	G or Diamond,	30	Shaft,	Gaseous,	2		19,060
Continental,	Lackawanna,	B or Dunmore No. 3,	30	Shaft,	Gaseous,	4		23,230
Totals,						26		377,010

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	General Superintendent	Post Office	Superintendent	Post Office	Railroad to Mine
Delaware, Lackawanna and Western Railroad Co.						
Bellevue,				John R. James,		
Dodge,				John R. James,		
Sloan,				H. E. Harris,		
Archbald,				T. J. Williams,		
Continental,	Lackawanna,	William W. Inglis,	Scranton,	T. J. Williams,	Scranton,	D. L. and W.
Holden,				W. E. Watkins,		
National,				W. E. Watkins,		
Hampton Washery,				H. E. Harris,		
Dodge Boiler Plant,				John R. James,		
Delaware and Hudson Co.						
Greenwood,	Lackawanna,	C. Evans, Jr., Inside; Charles Dorrance, Outside	Scranton,	John Lovering,	Minooka,	Delaware and Hudson
Greenwood Washery,						
South Side Coal Co.						
South Side Washery,	Lackawanna,			George A. Bell,	Scranton,	Delaware and Hudson
Scranton Anthracite Coal Co.						
Oak Hill,	Lackawanna,	M. J. Rafferty,	Scranton,	J. D. O'Toole,	Scranton,	N. Y. S. and W.
Meadow Hill Coal Co.,						
Meadow Hill Washery,	Lackawanna,			Z. H. Tinklepaugh,	Scranton,	Delaware and Hudson
Spruks Coal Co.						
East Mountain,	Lackawanna,	David Spruks,	Scranton,	Jonathan Vipond,	Scranton,	Erie
John Gibbons and Co.						
Carleton,	Lackawanna,	John Gibbons,	Scranton,	John Gibbons,	Scranton,	Local trade
Minooka Coal Co.						
Minooka,	Lackawanna,	H. M. Howard,	Minooka,	William Cotter,	Minooka,	L. and W. V.

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Exposives: Pounds of black powder used	Exposives: Pounds of dynamite used	Exposives: Pounds of permissible explosives used
Delaware, Lackawanna and Western Railroad Co.												
Bellevue,	Lackawanna,	527,286	49	45,213	572,548	278	1,030	11		390,450	26,923	1,019
Dodge,		349,527	46	40	349,413	274	684	4	12	414,125	62,060	3,833
Sloan,		424,306	181	19	424,506	262	1,037	4	19	665,575	67,759	
Archbald,		388,194	17,232	20	405,446	271	835		22	448,675	6,103	
Continental,		200,078	39	1,780	201,897	267	548		4	238,675	34,566	
Holden,		189,039	14,460	1,775	205,265	278	399		4	211,690	4,815	15,581
National,		297,013	12,050	6,084	315,147	264	719		5	391,925	11,248	11,480
		2,375,234	44,057	54,931	2,474,222		5,243	8	77	2,761,025	213,474	31,913
Hampton Washery,	Lackawanna,	98,807			98,807	186	94		1			
Hampton Boiler Plant,												
Dodge Boiler Plant,	Lackawanna,						117					
		98,807			98,807	186	111		1			
Totals,		2,474,041	44,057	54,931	2,573,029		5,354	8	78	2,761,025	213,474	31,913
Delaware and Hudson Co.												
Greenwood,	Lackawanna,	169,476	5,383	2,540	177,399	149	844		9	28,600	34,884	320,884
Greenwood Washery,	Lackawanna,	52,197	45,114		97,311	188	29					
Totals,		221,673	50,497	2,540	274,710		873		9	28,600	34,884	320,884

South Side Coal Co.													
South Side Washery,	Lackawanna,	55,646	132		55,778	207	46				700		
Scranton Anthracite Coal Co.													
Oak Hill,	Lackawanna,	50,109	3,650		53,759	223	92	1	1	83,750	4,350		
Meadow Hill Coal Co.													
Meadow Hill Washery,	Lackawanna,	26,052	128	663	26,843	298	34				775		
Spruks Coal Co.													
East Mountain,	Lackawanna,	17,177		6,386	23,563	272	48			19,125		525	
John Gibbons and Co.													
Carleton,	Lackawanna,	14,279	400	3,540	18,219	317	78		1	10,000	1,800	3,600	
Minooka Coal Co.													
Minooka,	Lackawanna,	16,898	240		17,138	138	36		1	4,000	300	4,300	
Grand totals,		2,875,875	99,104	68,060	3,043,039		6,561	9	90	2,906,509	256,283	361,222	

TABLE 2.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Names of Operators	County	Power Plant										Pumps				Haulage					Air Compressors	
		Boilers				Engines																
		Cylindrical		Tubular		Steam Engines (All Classes)		Internal Combustion Engines (Gas)		Electric Dynamos (All Classes)				Pumps Delivering Water to the Surface			Locomotives					
		Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total kilowatts	Number	Total capacity in gallons per minute	Number	Approximate number of gallons per minute	Number of horses and mules	Gasoline	Steam	Air	Electric	Number	Total capacity in cubic feet per minute
Delaware, Lackawanna and Western Railroad Co.	Lackawanna,	--	----	25	6,499	60	8,100	14	2,479	3	1,130	38	15,680	21	10,505	261	----	3	----	108	8	175
Delaware and Hudson Co.,		15	432	10	1,800	60	2,127	----	----	1	----	5	5,000	5	2,000	104	----	3	----	----	3	----
South Side Coal Co.,		----	----	1	40	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Scranton Anthracite Coal Co.		2	300	----	----	4	200	----	----	----	----	1	890	1	200	14	----	----	----	----	----	----
Meadow Hill Coal Co.,		2	99	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Spruks Coal Co.,		----	----	----	----	----	----	1	12	----	----	----	----	----	----	12	----	----	----	----	----	----
John Gibbons and Co.,		--	----	1	35	1	35	1	75	1	6,000	----	----	----	----	18	----	1	1	2	----	500
Minooka Coal Co.,		----	----	1	40	----	----	----	----	----	----	1	890	1	800	8	----	----	----	----	1	----
Totals,		19	822	38	8,414	125	10,462	16	2,566	5	7,130	45	22,280	28	13,505	417	----	7	1	110	12	675

TABLE 3.—Part 1.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside																Total inside	Outside										Total outside	Grand total inside and outside
		Mine foremen	Assistant mine foremen	Fire bosses	Miners	Miners' laborers	Machine miners	Machine runners and scrapers	Drivers and runners	Motormen and assistants	Doorboys and helpers	Trackmen and bratticemen	Timbermen and rockmen	Pumpmen and pipemen	Electricians and helpers	All other employes		Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Machinists and helpers	Trackmen and helpers	Slate pickers (boys)	Slate pickers (men)	Office employes	All other employes		
Delaware, Lackawanna and Western Railroad Co.	Lackawanna.	12	75		1,264	1,569	120	56	180	224	108	105	102	59	30	460	4,394	696	1	8	54	101	2	1	185	54	21	533	969	5,364
Delaware and Hudson Co.		2	3	5	278	107			102			8		4	1	36				3	17	49	2	1		45	2	148	267	873
South Side Coal Co., Scranton Anthracite Coal Co.																			1	1	1	2	1		3	3	2	33	46	46
Meadow Hill Coal Co.,		1	3		30	20			7		1	1	1			1	65	1	1	1	2	4	2	1	2	1	1	13	27	92
Spruks Coal Co.,					16	10			4	1		1					28	1	1	1	2	2				2	2	24	34	34
John Gibbons and Co.,		1			21	23			8			1		1			54	1	1	2	1	1	2	2	1	2	2	11	26	48
Minooka Coal Co.,		1	1		12	12			1			1					28	1	1	1	1		1	7	2	3	1	5	24	78
Totals,		18	82	5	1,644	1,801	120	56	311	225	109	117	103	55	31	498	5,175	1,386	5	16	79	169	9	5	290	108	33	771	1,386	6,561

TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Total
Delaware, Lackawanna and Western Railroad Co.,	Lackawanna,	22	21	24	12	24	23	23	26	25	23	24	24	271
Delaware and Hudson Co.,		16	9	19	14	18	20	20	20	13	----	----	----	149
South Side Coal Co.,		27	26	26	20	8	----	----	----	22	26	27	25	207
Scranton Anthracite Coal Co.,		24	23	24	23	23	21	----	----	18	24	23	20	223
Meadow Hill Coal Co.,		28	24	25	24	21	26	20	28	25	28	25	24	298
Spruks Coal Co.,		24	23	25	16	21	21	21	23	24	23	26	25	272
John Gibbon Coal Co.,		28	28	26	22	16	22	28	29	30	30	28	30	317
Minooka Coal Co.,		24	22	23	25	25	19	----	----	----	----	----	----	138

TABLE 4.—Fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 15	Frank Dubalutski,	Polish,	Laborer,	35	M.	1	2	Sloan,	Lackawanna,	Killed by fall of coal at face of chamber.
	Jacob Rocavitch,	Polish,	Miner,	39	M.	1	2	Sloan,		Killed by fall of roof at face of chamber
Mar. 1	Julian Zoor,	Polish,	Miner,	36	M.	1	5	Sloan,		Killed by explosion of blast at face of chamber.
April 25	Mike Rise,	Polish,	Tracklayer,	43	M.	1	5	Dodge,		Fatally injured by an endless rope. Outside.
June 26	Peter Sheriff,	Polish,	Miner,	22	S.			Dodge,		Fatally injured by explosion of gas at face of chamber.
Sept. 22	John McCrea,	Irish,	Miner,	45	M.	1	5	Oak Hill,		Killed by fall of roof at face of chamber.
Oct. 7	Elmer Lasker,	American,	Laborer,	43	M.	1		Dodge,		Killed by railroad cars under breaker. Outside.
13	William Briskie,	Polish,	Miner,	50	M.	1	4	Sloan,		Killed by explosion of blast at face of chamber.
Dec. 28	Alexander Phillips,	American,	Miner,	54	M.	1		Dodge,		Killed by fall of roof at face of chamber.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 10	John R. Thomas,	Welsh,	Miner,	53	M.	Sloan,		Toe injured by fall of roof in chamber.
	Simon Litcavage,	Polish,	Miner,	48	M.	Dodge,		Knee fractured by fall of roof at face of chamber.
13	Joseph Sylenski,	Polish,	Laborer,	38	M.	Continental,		Scalp lacerated by fall of roof at face of chamber.
	Patrick McGraw,	American,	Laborer,	45	M.	Archbald,		Ribs fractured. Kicked by a mule on gangway.
14	Michael Cook,	American,	Laborer,	38	M.	Sloan,		Back injured by fall of roof at face of chamber.
	Jacob Seadon,	Austrian,	Miner,	33	M.	Greenwood,		Finger injured by cars in chamber.
15	Andrew Moore,	American,	Miner,	40	M.	Archbald,		Knee bruised by falling at face of chamber.
17	Alex Bomboski,	Polish,	Laborer,	45	M.	Archbald,		Elbow bruised by falling in chamber.
29	Victor Maclavitch,	Polish,	Laborer,	25	S.	Sloan,		Shoulder bruised by fall of coal in chamber.
Feb. 2	William Jeneski,	Polish,	Laborer,	31	S.	Dodge,		Shoulder bruised by exposion of blast at face of chamber.
3	Joseph Govillo,	Polish,	Miner,	40	M.	Dodge,		Arm fractured by fall of roof at face of chamber.
	George Bendish,	Polish,	Footman,	23	M.	Archbald,	Lackawanna,	Ankle fractured by cars at foot of slope.
8	James Jeffers,	American,	Runner,	26	S.	Greenwood,		Hand injured by an iron bar on the cage.
9	James Donnelly,	American,	Runner,	20	S.	Greenwood,		Arm fractured by cars in chamber.
	Martin Mongen,	American,	Driver,	24	S.	National,		Arm fractured. Kicked by a mule on gangway.
17	Charles Herbert,	Polish,	Machineman,	21	S.	Bellevue,		Leg fractured by coal-cutting machine on gangway.
19	James Kawalskie,	Polish,	Miner,	38	M.	Bellevue,		Ruptured by lifting mine car in chamber.
20	William McGann,	Irish,	Laborer,	36	S.	Hampton Boiler Plant,		Skull fractured by falling from roof of boiler house. Outside.
26	David D. Reese,	Welsh,	Miner,	65	M.	Sloan,		Body bruised by explosion of blast in chamber.
29	Charles Frinda,	Russian,	Laborer,	31	M.	Sloan,		Back sprained by loading car at face of chamber.

Mar.	2	Stanley Brocavitch,	Polish,	Laborer,	36	M.	Sloan,		Body bruised by explosion of blast at face of chamber.
	4	Zigment Yermitskie,	Polish,	Laborer,	19	S.	Continental,		Body bruised by explosion of blast at face of chamber.
	8	John Rous,	Irish,	Footman,	33	M.	Sloan,		Hip dislocated by cars on gangway.
	18	John L. Jones,	Welsh,	Pumpman,	53	M.	Archbald,		Arm scratched by a rusty nail. Outside.
	20	Anthony Klueski,	Polish,	Laborer,	37	M.	Archbald,		Scalp injured by fall of roof in chamber
	27	Harry Hoffman,	American,	Footman,	38	M.	Bellevue,		Foot injured by cage at foot of shaft.
April	3	Wadislow Kruki,	Polish,	Miner,	36	M.	Greenwood,		Hand lacerated. Struck by piece of coal thrown by another miner in chamber.
	4	Steve Rindish,	Polish,	Miner,	30	M.	Archbald,		Back injured by fall of roof at face of chamber.
	13	Joseph Black,	American,	Motorman,	26	S.	Sloan,		Finger injured by cars on gangway.
	15	Luke Scott,	Irish,	Miner,	52	M.	Archbald,		Leg fractured by fall of roof in chamber.
	17	Mike Zowokin,	Polish,	Miner,	41	M.	Archbald,		Ankle sprained by piece of coal sliding on him in chamber.
	22	Richard Evans,	Welsh,	Electrician,	31	M.	Sloan,		Suffered from shock when cage struck the fans.
	25	Peter Giranter,	Lithuanian,	Miner,	40	M.	Sloan,		Rib fractured by fall of roof at face of chamber.
	26	Albert Balbooja,	Russian,	Companyman,	31	M.	Bellevue,		Ruptured while loading a car of rock in chamber.
May	5	Mike Mikolo,	American,	Runner,	22	S.	Archbald,		Back sprained while lifting a car on track.
		John Pnchaloski,	Polish,	Miner,	50	M.	Greenwood,		Leg fractured by coal sliding from gob.
	16	Joseph Rosetta,	Polish,	Miner,	56	M.	Oak Hill,		Spine injured by fall of roof on pillar work.
	18	Frank Geron,	Polish,	Miner,	44	M.	Bellevue,		Foot bruised by mine car in chamber.
June	1	Peter Ebby,	Slavonian,	Laborer,	35	M.	Holden,	Lackawanna,	Leg fractured by cars at face of chamber.
	3	Paul Buzak,	Polish,	Laborer,	38	M.	Sloan,		Arm fractured by cars at face of chamber.
	10	Paul Marloskie,	Polish,	Laborer,	28	M.	Dodge,		Leg fractured by fall of roof at face of chamber.
		Anthony Hart,	American,	Teamster,	30	S.	Greenwood,		Leg fractured by a wagon. Outside.
June	19	John Moore,	German,	Miner,	65	M.	Archbald,		Rib fractured by fall of roof in chamber.
	22	Alex Damolovits,	Polish,	Miner,	34	M.	Greenwood,		Leg fractured by fall of roof at face of chamber.
	23	Paul Elis,	German,	Miner,	32	S.	Archbald,		Hip dislocated by fall of roof at face of chamber.
	26	Joseph Koovski,	Polish,	Machineman,	29	M.	Dodge,		Face and hands burned by explosion of gas in chamber.
July	13	William Slevinski,	Polish,	Laborer,	21	S.	Sloan,		Thumb cut off by cars in chamber.
Aug.	2	John Patchcoski,	American,	Miner,	48	M.	Greenwood,		Arm fractured by explosion of blast at face of chamber.
	9	Alex Strok,	Russian,	Miner,	31	M.	Sloan,		Hand injured by coal rolling on him in chamber.
	18	John Passorilli,	Italian,	Miner,	34	M.	Greenwood,		Skull fractured by explosion of blast at face of chamber.
	22	Walter Stalice,	Polish,	Slatepicker,	15	S.	Sloan,		Leg fractured by falling from a tree. Outside.
	23	William Rowlands,	American,	Footman,	29	M.	Sloan,		Hand injured. Caught between door and frame on gangway.

TABLE 5.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Aug. 30	John Urcen,	Polish,	Laborer,	26	S.	Bellevue,		Leg fractured by explosion of blast at face of chamber.
	John Uran,	Polish,	Laborer,	26	S.	Bellevue,		Leg fractured by explosion of blast in chamber.
Sept. 1	Paul Martin,	Polish,	Miner,	33	M.	Dodge,		Eye injured by exposion of blast at face of chamber.
5	John Bolzer,	American,	Brakeman,	23	S.	Bellevue,		Foot injured by car on gangway.
6	Thomas Costello,	American,	Motorman,	31	M.	Bellevue,		Foot injured by car on gangway.
	Harry Hill,	American,	Driver,	18	S.	Bellevue,		Jaw fractured by cars on gangway.
7	Charles Bohan,	American,	Motorman,	24	S.	National,		Finger fractured by cars on gangway.
12	Richard Grimes,	American,	Brakeman,	20	S.	Holden,		Leg fractured by cars on gangway.
19	Mike Levonskie,	Polish,	Miner,	45	M.	Archbald,		Foot injured by fall of roof at face of chamber.
21	Barcelo Regni,	Italian,	Laborer,	34	S.	National,		Ankle dislocated by fall of roof in chamber.
22	Thomas Chermoski,	Polish,	Miner,	34	M.	Dodge,		Head injured by fall of roof at face of chamber.
23	George Wood,	American,	Miner,	56	M.	Holden,	Lackawanna,	Leg fractured by explosion of blast at face of chamber
29	Charles Sedychank,	Slavonian,	Headman,	26	S.	Archbald,		Suffered from shock when he fell in the breaker. Outside.
Oct. 11	John M. Evans,	American,	Brakeman,	26	M.	Holden,		Leg fractured by cars on gangway.
12	Joseph Cheabor,	Polish,	Laborer,	38	M.	Archbald,		Body bruised by fall of roof in chamber.
13	Joshiua Taylor,	English,	Miner,	42	M.	Dodge,		Knee injured by explosion of blast in chamber.
20	Adolph Milliskie,	Polish,	Laborer,	30	S.	Archbald,		Leg fractured by fall of coal at face of chamber.
26	Bolesof Vancoski,	Polish,	Driver,	19	S.	Archbald,		Hips bruised by cars in chamber.
28	John Piaski,	Polish,	Miner,	55	M.	Dodge,		Foot fractured by fall of roof in chamber.
Nov. 3	John Filip,	Polish,	Laborer,	24	M.	Archbald,		Finger bruised by rush of coal in chute.
10	Michael O'Malley,	Irish,	Miner,	47	M.	Continental,		Side bruised by falling in chamber.
11	George Mangon,	American,	Motor-helper,	26	M.	Continental,		Hip bruised by cars on gangway.
15	William Lesh,	American,	Runner,	21	S.	Carleton,		Arm fractured by car on gangway.

	16	Thomas O. Jones,	Welsh,	Miner,	55	M.	Dodge,		Arm fractured by fall of roof on pillar work.
		Paul Gayaskie,	Polish,	Miner,	55	M.	Dodge,		Leg fractured by fall of roof on pillar work.
	19	Thomas Moore,	American,	Laborer,	17	S.	Minooka,		Knee fractured by falling into ditch. Outside.
	20	Steve Andreska,	Polish,	Miner,	36	S.	Sloan,		Spine fractured by fall of roof at face of chamber.
		Anthony Francy,	American,	Miner,	38	M.	Archbald,		Nose fractured by fall of roof at face of chamber.
		Wacheto Manolli,	Italian,	Laborer,	32	M.	National,		Face and hands burned by explosion of gas on gangway.
		Evan Owens,	American,	Companyman,	61	M.	Sloan,		Leg fractured by cars in chamber.
	22	Joseph Bronoskey,	Polish,	Miner,	31	M.	Archbald,		Leg bruised by explosion of blast in chamber.
	25	David W. Jones,	Welsh,	Miner,	50	M.	Sloan,	Lackawanna,	Head and arm injured by explosion of blast in chamber.
		William M. Davis,	American,	Driver,	23	S.	Archbald,		Hip bruised by cars on gangway.
Dec.	1	Richard Evans,	Welsh,	Miner,	58	M.	Archbald,		Hips bruised by fall of roof at face of chamber.
	5	Owen Crogan,	American,	Miner,	47	M.	Dodge,		Arms and face burned by explosion of blast in chamber.
	8	Albert Zwack,	Polish,	Laborer,	45	M.	Bellevue,		Hand scratched while bailing water in chamber.
	27	Michael Olezfski,	Polish,	Laborer,	36	M.	Sloan,		Arm fractured by fall of roof at face of chamber.
		George Lawe,	American,	Footman,	24	M.	National,		Ruptured while pushing car at foot of shaft.

CONDITION OF COLLIERIES

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Bellevue, Dodge, Sloan, Archbald, Continental, Holden and National Collieries.—Ventilation, drainage and condition as to safety, good.

DELAWARE AND HUDSON COMPANY

Greenwood Colliery.—Ventilation, drainage and condition as to safety, good.

SCRANTON ANTHRACITE COAL COMPANY

Oak Hill Colliery.—Ventilation, drainage and condition as to safety, good.

SPRUKS COAL COMPANY

East Mountain Colliery.—Ventilation, drainage and condition as to safety, good.

JOHN GIBBONS AND COMPANY

Carleton Colliery.—Ventilation, drainage and condition as to safety, good.

MINOOKA COAL COMPANY

Minooka Colliery.—Ventilation, drainage and condition as to safety, good.

IMPROVEMENTS

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Bellevue Colliery.—Completed a rock tunnel, on a 45-degree pitch, connecting Nos. 1 and 2 Dunmore veins, length 75 feet, and one tunnel 7 by 12 feet from the New County vein to the Big vein, length 50 feet. Installed one 7-ton locomotive and reel, etc., in the Diamond vein "T" gangway.

Outside:—Installed a new Jeffrey ventilating fan, 6 feet wide, 16 feet in diameter, and built a new fan house for the same.

Dodge Colliery.—Completed a tunnel and bottom cut, 350 feet long from Rock to Bottom Diamond vein, and foot branch installed with connections with above landings. Tunnel, bottom and roof cut for a distance of 198 feet from Bottom Diamond to Rock vein. Roof cut from L and M gangway, Bottom Diamond vein, for a distance of 400 feet, and roof cut on No. 2 South gangway for a distance of 270 feet. Installed one 10-ton locomotive on main haulage-road. Made new shaft landing in Rock vein; also new sub-station and new mule barn.

Sloan Colliery.—Outside:—Installed an auxiliary line between Hampton and Sloan mines.

Archbald Colliery.—Completed a bore hole from surface to New County vein, and changing cable.

Installed one Goodman coal-cutting machine in the Diamond vein; also four 7-ton locomotives with reel devices, etc.

Outside:—Installed one rotary converter, transformer, switchboard; changing equipment in sub-station.

Continental Colliery.—Installed one 7-ton electric locomotive, with reel, etc., in Dunmore No. 3 vein, also one Goodman coal-cutting machine.

Outside:—Built a new washhouse.

National Colliery.—Installed one motor in Dunmore No. 1 vein and an endless rope at foot of shaft in No. 2 Dunmore vein.

Outside:—Built stairway, railings, etc., around boilers.

SCRANTON ANTHRACITE COAL COMPANY

Oak Hill Colliery.—Completed a new slope to the No. 2 Dunmore vein. Built an addition to the breaker.

SPRUKS COAL COMPANY

East Mountain Colliery.—Inside:—Installed an electric hoist.

Outside:—Installed one 12 HP. gasoline engine and built an engine house for same. Built a new office and scale house, mule barn, hospital with equipment, and track and trestle from breaker to Erie tracks, and a set of coal pockets for storing coal for delivery.

Sunk an air shaft.

SIXTH DISTRICT

LACKAWANNA COUNTY

Scranton, Pa., February 14, 1917.

Hon. James E. Roderick, Chief of Department of Mines:

Sir:—I have the honor to transmit herewith my report as Inspector of Mines for the Sixth Anthracite District for the year ending December 31, 1916.

Respectfully submitted,

D. T. WILLIAMS,
Inspector.

SUMMARY OF STATISTICS

Number of collieries,	10
Number of mines,	28
Number of mines in operation,	28
Number of gaseous mines in operation,	10
Number of non-gaseous mines in operation,	18
Number of tons of coal shipped to market,	2,969,502
Number of tons used at mines for steam and heat,	273,233
Number of tons sold to local trade and used by employes,	54,783
Number of tons produced,	3,297,518
Number of tons produced by compressed air machines,	.....
Number of tons produced by electrical machines,	283,088
Number of persons employed inside of mines,	5,318
Number of persons employed outside,	1,547
Number of persons employed inside between 16 and 21 years,	388
Number of persons employed outside between 14 and 21 years,	392
Number of fatal accidents inside,	19
Number of fatal accidents outside,	2
Number of non-fatal accidents inside,	43
Number of non-fatal accidents outside,	6
Number of tons of coal produced per fatal accident inside,	173,554
Number of tons produced per fatal accident inside and outside,	157,025
Number of persons employed per fatal accident inside,	279
Number of persons employed per fatal accident outside,	773
Number of persons employed per fatal accident inside and outside,	327
Number of persons employed per non-fatal accident inside,	124
Number of persons employed per non-fatal accident outside,	258
Number of persons employed per non-fatal accident inside and outside,	140
Number of wives made widows,	14
Number of children made orphans,	23
Number of steam locomotives inside,	.....
Number of steam locomotives outside,	18
Number of compressed air locomotives inside,	18
Number of compressed air locomotives outside,	.....
Number of electric motors inside,	84
Number of electric motors outside,	4
Number of gasoline locomotives inside,	.....
Number of gasoline locomotives outside,	.....
Number of cylindrical boilers,	11
Number of tubular boilers,	85
Number of steam engines of all classes,	165
Number of internal combustion engines (gas),	23
Number of electric dynamos,	17
Number of pumps of all classes,	122
Number of pumps delivering water to surface,	19
Number of air compressors,	7
Number of fans in use,	18
Number of new mines opened,	3
Number of old mines abandoned,	.....

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Pennsylvania Coal Company,	1,188,145
Delaware, Lackawanna and Western Railroad Company,	852,375
Delaware and Hudson Company,	774,200
Scranton Coal Company,	366,952
Nay-Aug Coal Company,	81,635
Spencer Coal Company,	18,103
Carney and Brown Coal Company,	8,749
No. 6 Coal Company,	7,359
Total,	3,297,518

Production by Counties

Lackawanna,	3,297,518

TABLE B.—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Total number of employes	Number of employes inside per fatal accident	Number of employes outside per fatal accident	Number of employes inside per non-fatal accident	Number of employes outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Pennsylvania Coal Co.,	6	1	7	14	------	14	198,024	84,867	1,223	489	1,812	221	489	95	--------
Delaware, Lackawanna and Western Railroad Co.,	5	------	5	12	------	12	170,475	71,031	1,615	257	1,872	323	--------	135	--------
Delaware and Hudson Co.,	4	1	5	4	3	7	193,550	193,550	1,419	429	1,848	355	429	355	143
Scranton Coal Co.,	4	------	4	9	3	12	91,738	40,773	652	259	911	163	--------	72	86
Nay-Aug Coal Co.,	------	------	------	3	------	3	----------	27,212	152	33	185	--------	--------	51	--------
Carney and Brown Coal Co.,	------	------	------	1	------	1	----------	8,749	48	25	73	--------	--------	48	--------
Miscellaneous companies,	------	------	------	------	------	------	----------	----------	109	55	164	--------	--------	--------	--------
Totals and averages,	19	2	21	43	6	49	173,554	76,686	5,318	1,547	6,865	279	773	124	258

TABLE C.—Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,			1									1	2	10.53
Falls of roof,		1	1	1		2	1	2					8	42.10
Mine cars,	1										1		2	10.53
Blasts, premature and otherwise,	1			1									2	10.53
Crushed by rush of coal,		2											2	10.53
Mules,								1					1	5.25
Electricity,							1				1		2	10.53
Totals,	2	3	2	2		2	2	3			2	1	19	100.00
Outside														
Machinery,				1									1	50.00
Falling off trestle,	1												1	50.00
Totals,	1			1									2	100.00
Grand totals,	3	3	2	3		2	2	3			2	1	21	100.00

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,			1										1	2.33
Falls of roof,		1		1	2	1	1		1	1	1		9	20.93
Mine cars,	1					1	1	1	3	2	1	1	11	25.58
Explosions of gas,								1	1				2	4.65
Explosions of powder and dynamite,	1			1		1		2					5	11.63
Blasts, premature and otherwise,	2					1	1				1		5	11.63
Falling into shafts,		1											1	2.33
Falling,	1			1									2	4.65
Struck by rock and timber,	1		1						1				3	6.98
Lifting rock,		1											1	2.33
Machinery,				1									1	2.32
Struck by door,				1									1	2.32
Struck by rope,									1				1	2.32
Totals,	6	3	2	5	2	4	3	4	7	3	3	1	43	100.00
Outside														
Cars,			1			1		1					3	50.00
Machinery,									1		1		2	33.33
By falling,											1		1	16.67
Totals,			1			1		1	1		2		6	100.00
Grand totals,	6	3	3	5	2	5	3	5	8	3	5	1	49	100.00

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,	1	1	2	2		1		1					8
Miners' laborers,		1				1	1	1			2	1	7
Drivers and runners,								1					1
Motormen and assistants,	1						1						2
Timbermen and rockmen,		1											1
Totals,	2	3	2	2		2	2	3			2	1	19
Outside													
Slatepickers (boys),				1									1
Laborers,	1												1
Totals,	1			1									2
Grand totals,	3	3	2	3		2	2	3			2	1	21

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Fire bosses,				1									1
Miners,	3	1	1	1	1	3	3	2	1	1	1	1	19
Miners' laborers,	3	2	1	1	1			1	3	2	1		15
Drivers and runners,									2				2
Motormen and assistants,						1		1			1		3
Doorboys and helpers,				1									1
Trackmen and bratticemen,				1					1				2
Totals,	6	3	2	5	2	4	3	4	7	3	3	1	43
Outside													
Foremen,									1				1
Laborers,			1					1					2
Planemen,						1							1
Oilers,											1		1
Loaders,											1		1
Totals,			1			1		1	1		2		6
Grand totals,	6	3	3	5	2	5	3	5	8	3	5	1	49

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	1			1			1	1					4
English,		1		1									2
German,	1												1
Polish,		2	2			1		1			1	1	8
Italian,											1		1
Russian,	1			1		1	1	1					5
Totals,	3	3	2	3		2	2	3			2	1	21

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	1			1		2			2		3		9
English,							1						1
Welsh,			1	2			1		1				5
German,								3					3
Polish,	1		1	2		2		1	1	2	1		11
Hungarian,	1												1
Italian,			1			1			2				4
Slavonian,	1	1			1			1	1		1		6
Lithuanian,	1	2			1							1	5
Russian,	1						1		1	1			4
Totals,	6	3	3	5	2	5	3	5	8	3	5	1	49

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and types of safety lamps used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Pennsylvania Coal Co. Pennsylvania No. 1 Colliery:										
Pennsylvania No. 1,	Lackawanna,	Pittston,	172					Gaseous,		
		Clark,	95					Gaseous,		
		Dunmore No. 2,	48					Gaseous,		
		Dunmore No. 3,	46	274				Gaseous,		
Gipsy Grove,	Lackawanna,	Dunmore No. 2,	50					Non-gaseous,		
		Dunmore No. 3,	55	168				Non-gaseous,		
Penusylvania No. 2,	Lackawanna,	Dunmore No. 2,	64				Drift,	Non-gaseous,		
		Dunmore No. 3,	48				Tunnel,	Non-gaseous,		
Pittston Slope,		Pittston,	49		785	3.5		Non-gaseous,		
Marcy Slope,	Lackawanna,	Marcy,	54		1,930	3.5		Non-gaseous,		
Clark Slope,		Clark,	52		970	4		Non-gaseous,		
Underwood Colliery :										
		Rock,	108					Gaseous,		
		Pittston,	72					Gaseous,		
Underwood,	Lackawanna,	Marcy,	81					Gaseous,		
		Clark,	84					Gaseous,		
		Dunmore No. 2,	52					Gaseous,		
		Dunmore No. 3,	50	204				Gaseous,		
Delaware, Lackawanna and Western Railroad Co. Storrs Colliery:										
		Big,						Gaseous,	137	
		Clark,						Gaseous,	860	
Storrs No. 1,	Lackawanna,	Dunmore No. 1,						Gaseous,		
		Dunmore No. 2,						Gaseous,		
		Dunmore No. 3,		740				Gaseous,		

Storrs No. 2,	Lackawanna,	4 Foot,						Gaseous,	
		Big,						Gaseous,	20
		Diamond,		207				Gaseous,	
		4 Foot,						Gaseous,	
Storrs No. 3,	Lackawanna,	5 Foot,						Gaseous,	
		Rock,						Gaseous,	
		Clark,		582				Gaseous,	
		Dunmore No. 3,						Gaseous,	
Nos. 1, 2, 3 and 4,	Lackawanna,	8 Foot,					Drifts,	Non-gaseous,	
Delaware and Hudson Co.									
Olyphant Colliery:									
		Rock,	84					Gaseous,	
		14 Foot,	120						
		New County,	50					Gaseous,	
Olyphant No. 2 Shaft,	Lackawanna,	Clark Top Split,	30					Gaseous,	
		Clark Bottom Split,	42					Gaseous,	
		Dunmore No. 4,	68	751				Gaseous,	
		8 Foot,	84					Non-gaseous,	
		5 Foot,	64					Non-gaseous,	
		30 Inch,	27					Non-gaseous,	
Olyphant No. 2 Slope,	Lackawanna,	4 Foot,	48					Non-gaseous,	
		Diamond,	58		2,900			Non-gaseous,	
		Rock,	84					Gaseous,	
Miles Slope,	Lackawanna,	Dunmore No. 4,	68		2,900	15		Gaseous,	
Scranton Coal Co.									
Johnson Colliery:									
		14 Foot,	72					Gaseous,	
Johnson No. 1 Shaft,	Lackawanna,	Dunmore No. 2,	36					Gaseous,	
		Dunmore No. 3,	60	672				Gaseous,	
		Diamond,	60					Gaseous,	
Johnson No. 2 Slope,	Lackawanna,	14 Foot,	63					Gaseous,	
		Dunmore No. 3,	60		750	19		Gaseous,	
Richmond No. 3 Colliery:									
		14 Foot,	168					Gaseous,	
		Clark,	72					Gaseous,	
Richmond No. 3 Shaft,	Lackawanna,	Dunmore No. 1,	40					Gaseous,	
		Dunmore No. 2,	45					Gaseous,	
		Dunmore No. 3,	33	520				Gaseous,	
Nay-Aug Coal Co.									
Nay-Aug Colliery:									
Nay-Aug No. 1,		Dunmore No. 1,	72		1,200	8		Non-gaseous,	
Nay-Aug No. 2,	Lackawanna,	Dunmore No. 2,	68				Drift,	Non-gaseous,	
Nay-Aug No. 3,		Dunmore No. 3,	60				Drift,	Non-gaseous,	
Spencer Coal Co.									
Spencer Colliery:									
Spencer No. 1,	Lackawanna,	Dunmore No. 1,	72	150				Non-gaseous,	
Spencer No. 2,	Lackawanna,	Dunmore No. 2,	60	70				Non-gaseous,	

TABLE I—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and types of safety lamps used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Carney and Brown Coal Co.										
Carney and Brown Colliery:										
Marcy Slope,	Lackawanna,	Marcy,	54		500	7		Non-gaseous,		
Clark Slope,		Clark,	52		200	30		Non-gaseous,		
No. 6 Coal Co.										
No. 6 Colliery:										
No. 6 Slope,	Lackawanna,	Dunmore No. 1,	72		200	20		Non-gaseous,		

TABLE I—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Pennsylvania Coal Co. Pennsylvania No. 1 Colliery:												
Pennsylvania No 1,	Lackawanna,	Pittston,	Guibal,	20	76	1.5	Steam,	30,530	33,200	27,130	3	81
		Clark,						12,500	13,220	10,190	1	25
		Dunmore No. 2,	Guibal,	18	70	1.2	Steam,	81,220	84,650	64,040	8	120
		Dunmore No. 3,						32,140	34,650	18,900	4	51
		Dunmore No. 2,	No. 1,					10,000	11,500	9,500	1	31
Gipsy Grove,	Lackawanna,	Dunmore No. 3,	Fan.					9,000	10,800	8,500	1	38
		Dunmore No. 2,	Guibal,	18	70	1	Steam,	47,000	42,000	31,500	4	113
Pennsylvania No. 2,	Lackawanna,	Dunmore No. 3,						38,800	52,100	43,500	3	98
Pittston Slope,	Lackawanna,	Pittston,	Propeller,	8	230	1.2	Electricity,	4,000	4,500	3,500	1	11
Marcy Slope,		Marcy,						24,600	25,900	22,800	3	73
Clark Slope,		Clark,	Guibal,	18	60	.9	Steam,	21,000	22,000	20,200	2	73
Underwood Colliery :												
		Rock,						*				
Underwood,	Lackawanna,	Pittston,	Guibal,	14	70	1.5	Steam,	47,950	48,050	31,000	3	82
		Marcy,						12,100	12,200	9,100	1	16
		Clark,						57,300	57,700	46,250	5	86
		Dunmore No. 2,	Guibal,	14	60	.5	Steam,	24,600	25,400	20,800	2	42
		Dunmore No. 3,						35,200	35,400	28,700	3	42
Delaware, Lackawanna and Western Railroad Co. Storrs Colliery:												
		Big,										
Storrs No. 1,	Lackawanna,	Clark,										
		Dunmore No. 1,	Guibal,	24	68	2.2	Steam,	206,261	240,317	175,030	10	553
		Dunmore No. 2,										
		Dunmore No. 3,										

*New development.

TABLE I—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Storrs No. 2,	Lackawanna,	4 Foot, Big, Diamond,	Jeffrey,	15	91	1.8	Steam,	189,454	195,995	154,003	10	466
Storrs No. 3,	Lackawanna,	4 Foot, 5 Foot, Rock, Clark, Dunmore No. 3,	Guibal,	24	64	1.5	Steam,	142,478	180,861	105,989	9	453
Nos. 1, 2, 3 and 4,	Lackawanna,	8 Foot,	Guibal,	6	165	1	Electricity,	46,000	52,350	33,000	4	120
Delaware and Hudson Co. Olyphant Colliery:												
Olyphant No. 2 Shaft,	Lackawanna,	Rock, 14 Foot, New County, Clark Top Split, Clark Bottom Split, Dunmore No. 4, 8 Foot, 5 Foot,	Guibal,	28	60	2	Steam,	122,910	147,230	111,445	6	254
			Guibal,	20	85	2	Steam,	99,504 17,936 13,260 84,710	124,884 21,466 15,812 86,189	68,546 12,280 11,800 81,814	3 1 1 3	210 31 36 133
Olyphant No. 2 Slope,	Lackawanna,	30 Inch, 4 Foot, Diamond,	Guibal,	28	60	2	Steam,	19,185 62,060	20,375 66,940	18,100 57,880	1 3	20 70
Miles Slope,	Lackawanna,	Rock, Dunmore No. 4,	Jeffrey,	20	90	2.2	Steam,	63,200 19,400	66,000 21,500	60,000 18,400	3 1	71 30

Scranton Coal Co.													
Johnson Colliery:													
Johnson No. 1 Shaft,	Lackawanna,	14 Foot,	Guibal,	30	55	1.5	Steam,	37,000	40,500	†	2	34
		Dunmore No. 2,						25,500	28,000	†	1	28
		Dunmore No. 3,						55,600	58,600	†	3	160
Johnson No. 2 Slope,	Lackawanna,	Diamond,	Guibal,	18	100	.5	Steam,	15,650	87,000	†	1	26
		14 Foot,						40,500	45,250	†	2	61
		Dunmore No. 3,						18,200	19,075	†	1	22
Richmond No. 3 Colliery:												
Richmond No. 3 Shaft,	Lackawanna,	14 Foot,	Guibal,	30	30	.9	Steam,	16,000	19,000	†	1	25
		Clark,						16,700	20,000	†	1	27
		Dunmore No. 1,						8,700	9,000	8,700	1	21
		Dunmore No. 2,						37,000	38,100	34,300	2	54
		Dunmore No. 3,						20,500	24,000	16,300	2	30
Nay-Aug Coal Co.												
Nay-Aug Colliery:												
Nay-Aug No. 1,	Lackawanna,	Dunmore No. 1,					Natural,	27,000	28,000	21,000	2	70
Nay-Aug No. 2		Dunmore No. 2,					Natural,	23,000	25,000	20,000	1	20
Nay-Aug No. 3,		Dunmore No. 3,					Natural,	16,000	19,000	15,000	1	15
Spencer Coal Co.												
Spencer Colliery:												
Spencer No. 1,	Lackawanna,	Dunmore No. 1,					Natural,	30,000	36,000	25,000	2	50
Spencer No. 2,	Lackawanna,	Dunmore No. 2,					Natural,	18,000	22,000	14,000	1	22
Carney and Brown Coal Co.												
Carney and Brown Colliery:												
Marcy Slope,	Lackawanna,	Marcy,					Natural,	12,654	13,215	10,578	2	48
Clark Slope,		Clark,					Natural,					
No. 6 Coal Co.												
No. 6 Colliery:												
No. 6 Slope,	Lackawanna,	Dunmore No. 1,						7,000	7,200	5,000	1	8

†Robbing pillars.

TABLE J.—Operators and mines, name of coal bed, kind of openings, mining machines used and approximate number of tons produced by machines

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of opening	Gaseous or non-gaseous	Mining Machines: Electric	Mining Machines: Compressed air	Approximate number of tons produced by machines
Pennsylvania Coal Co.								
Pennsylvania No. 1,	Lackawanna,	Clark,	52	Slope,	Non-gas.,	1		25,588
		No. 2 Dunmore,	48	Shaft,	Gaseous,	1		4,849
		Pittston,	72	Shaft,	Gaseous,	3		32,141
		Marcy,	81	Shaft,	Gaseous,	1		3,154
Underwood,		Clark,	84	Shaft,	Gaseous,	4		62,330
		No. 2 Dunmore,	52	Shaft,	Gaseous,	4		5,875
		No. 3 Dunmore,	50	Shaft,	Gaseous,	3		29,384
Totals,						17		163,321
Delaware, Lackawanna and Western Railroad Co.								
Storrs,	Lackawanna,	Clark,		Shaft,	Gaseous,	12		85,327
Delaware and Hudson Co.								
		30-Inch,	27	Slope,	Non-gas.,	1		1,862
Olyphant,	Lackawanna,	New County,	50	Shaft,	Gaseous,	2		17,454
		Clark Bottom Split,	30	Shaft,	Gaseous,	1		1,164
Totals,						4		20,480
Scranton Coal Co.								
Johnson,	Lackawanna,	Dunmore No. 2,	36	Shaft,	Gaseous,	1		13,960
Grand totals,						34		283,088

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	General Superintendent	Post Office	Superintendent	Post Office.	Railroad to Mine
Pennsylvania Coal Co. Pennsylvania No. 1, Underwood,	Lackawanna,	Joseph P. Jennings,	Scranton,	H. E. Yewens, William Jeffrey,	Dunmore, Throop,	Erie.
Delaware, Lackawanna and Western Railroad Co. Storrs, Storrs Washery,	Lackawanna,	William W. Inglis, General Manager.	Scranton,	Frank G. Dagger,	Scranton,	D., L. and W.
Delaware and Hudson Co., Olyphant, Olyphant Washery,	Lackawanna,	Cadwallader Evans, Jr.	Scranton,	S. E. VanHorn,	Scranton,	Delaware and Hudson.
Scranton Coal Co. Johnson, Richmond No. 3,	Lackawanna,	W. L. Allen, General Manager.	Scranton,	Daniel Young, Inside, John J. Aitken, Outside	Scranton, Priceburg,	N. Y., O. and W. N. Y., O. and W.
Nay-Aug Coal Co. Nay-Aug,	Lackawanna,	E. H. Leaning,	Carbondale,	John A. Hines,	Dunmore,	Erie.
Spencer Coal Co. Spencer,	Lackawanna,	A. F. McHale,	Dunmore,			Erie.
Carney and Brown Coal Co. Carney and Brown,	Lackawanna,	John Carney,	Dunmore,	John J. Brown,	Dunmore,	D., L. and W.
No. 6 Coal Co. No. 6,	Lackawanna,	W. Y. Moffatt,	Dunmore,			None.

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives		
										Pounds of black powder used	Pounds of dynamite used	Pounds of permissible explosives used
Pennsylvania Coal Co.												
Pennsylvania No. 1,	Lackawanna,	826,061	29,985	2,790	858,836	326	1,211	4	11	843,100		23,068
Underwood,	Lackawanna,	301,305	27,244	760	329,309	301	601	3	3	235,350	42,835	15,000
Totals,		1,127,366	57,229	3,550	1,188,145		1,812	7	14	1,078,450	42,835	38,068
Delaware, Lackawanna and Western Railroad Co.												
Storrs,	Lackawanna,	739,678	48,180	9,708	797,566	229	1,866	5	12	896,550	85,767	
Storrs Washery,	Lackawanna,	54,809			54,809	69	6					
Totals,		794,487	48,180	9,708	852,375		1,872	5	12	896,550	85,767	
Delaware and Hudson Co.												
Olyphant,	Lackawanna,	674,847	79,183	18,738	772,768	293	1,848	4	6	808,240	54,670	863,726
Olyphant Washery,	Lackawanna,	1,432			1,432			1	1			
Totals,		676,279	79,183	18,738	774,200		1,848	5	7	808,240	54,670	863,726
Scranton Coal Co.												
Johnson,	Lackawanna,	199,473	65,514	2,982	267,969	164	663	4	6	85,000	14,600	
Richmond No. 3,	Lackawanna,	75,186	19,216	4,581	98,983	159	248		6	57,500	11,200	
Totals,		274,659	84,730	7,563	366,952		911	4	12	142,500	25,800	

Nay-Aug Coal Co.												
Nay-Aug,	Lackawanna,	77,724	3,911	----------	81,635	303	185	----	3	10,825	7,365	----------
Spencer Coal Co.												
Spencer,	Lackawanna,	16,103	----------	2,000	18,103	134	150	----	----	10,625	2,550	----------
Carney and Brown Coal Co.												
Carney and Brown,	Lackawanna,	2,884	----------	5,865	8,749	80	73	----	1	7,500	400	----------
No. 6 Coal Co.												
No. 6,	Lackawanna,	----------	----------	7,359	7,359	204	14	----	----	----------	----------	2,200
Grand totals,	----------	2,969,502	273,233	54,783	3,297,518	------	6,865	21	49	2,954,690	219,387	903,994

TABLE 2.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Names of Operators	County	Power Plant										Pumps				Haulage					Air Compressors	
		Boilers				Engines																
		Cylindrical		Tubular		Steam Engines (All Classes)		Internal Combustion Engines (Gas)		Electric Dynamos (All Classes)				Pumps Delivering Water to the Surface			Locomotives					
		Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total kilowatts	Number	Total capacity in gallons per minute	Number	Approximate number of gallons per minute	Number of horses and mules	Gasoline	Steam	Air	Electric	Number	Total capacity cubic feet per minute
Pennsylvania Coal Co.,	Lackawanna,			25	4,250	38	3,900			4	3,091	43	10,110	4	2,900	59				47	1	1,190
Delaware, Lackawanna and Western Railroad Co.,	Lackawanna,	6	750	14	3,218	23	4,327			5		23	10,100	4	33,000	98		7		22		
Delaware and Hudson Co.,	Lackawanna,			16	5,864	57	6,972	23	511	3		4	700			118		8	18	7	5	9,009
Scranton Coal Co.,	Lackawanna,			22	3,420	40	10,035			5	412	48	19,568	10	6,200	105		3		3	1	1,500
Nay-Aug Coal Co.,	Lackawanna,			3	240	4	130					4	800	1	100	28						
Spencer Coal Co.,	Lackawanna,	5	175	2	250											19				6		
Carney and Brown Coal Co.,	Lackawanna,			3	360	3	250									16						
Totals,		11	925	85	17,602	165	25,614	23	511	17	3,503	122	41,278	19	42,200	443		18	18	85	7	11,690

TABLE 3.—Part 1.—Number of Each Class of Employes Inside and Outside of Mines

Names of Operators	County	Inside															Total inside	Outside											Total outside	Grand total inside and outside
		Mine foremen	Assistant mine foremen	Fire bosses	Miners	Miner's laborers	Machine miners	Machine runners and scrapers	Drivers and runners	Motormen and assistants	Doorboys and helpers	Trackmen and bratticemen	Timbermen and rockmen	Pumpmen and pipemen	Electricians and helpers	All other employes		Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Machinists and helpers	Trackmen and helpers	Slate pickers (boys)	Slate pickers (men)	Office employes	All other employes			
Pennsylvania Coal Co.,	Lackawanna,	4	15	1	445	393	64	16	37	87	16	39	33	11	17	145	1,323	2	2	43	39	14	7	101	16	5	260	489	1,812
Delaware, Lackawanna, and Western Railroad Co.,		4	16	---	485	630	9	18	104	61	22	43	30	8	8	177	1,615	---	2	17	43	4	2	60	---	4	125	257	1,872
Delaware and Hudson Co.,		2	6	10	376	598	2	9	141	40	21	10	5	4	2	193	1,419	---	4	16	55	9	1	---	116	9	219	429	1,848
Scranton Coal Co.,		3	5	8	228	165	---	2	101	6	12	14	9	19	1	79	652	---	2	19	65	6	5	32	34	3	93	259	911
Nay-Aug Coal Co.,		1	2	---	64	60	---	---	18	---	---	2	---	---	---	5	152	1	1	2	1	2	---	3	1	2	20	33	185
Spencer Coal Co.,		1	1	---	34	39	---	---	13	2	---	2	---	2	1	5	100	1	1	3	9	2	1	---	---	2	31	50	150
Carney and Brown Coal Co.,		1	2	---	16	16	---	---	6	---	---	1	---	---	---	6	48	1	1	2	4	---	---	7	---	1	9	25	73
No. 6 Coal Co.,		1	---	---	3	4	---	---	1	---	---	---	---	---	---	---	9	---	---	---	---	---	---	2	---	1	2	5	14
Totals,		17	47	19	1,651	1,905	75	45	421	196	71	111	77	44	29	610	5,318	5	13	102	216	37	16	205	167	27	759	1,547	6,865

TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Total
Pennsylvania Coal Co.,	Lackawanna,	25	25	27	27	27	27	26	27	27	26	25	25	314
Delaware, Lackawanna and Western Railroad Co.,		19	20	23	12	18	19	19	21	20	19	20	19	229
Delaware and Hudson Co.,		24	25	22	25	26	23	23	27	27	25	23	26	293
Scranton Coal Co.,		15	15	13	13	15	13	13	13	14	10	13	14	161
Nay-Aug Coal Co.,		25	25	27	24	26	24	25	27	25	25	25	25	303
Spencer Coal Co.,		23	23	18	15	8	------	------	------	------	------	28	24	134
Carney and Brown Coal Co.,		------	------	------	------	------	------	------	------	12	21	24	23	80
No. 6 Coal Co.,		25	25	27	12	6	------	------	15	22	22	26	25	204

TABLE 4.—Fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 3	Richard Timlin,	American,	Motorman,	25	S.			Storrs,		Fatally injured by falling under trip of loaded mine cars on gangway road. He lost control of motor and jumped off. Died on way to hospital.
6	Harry Arwisky,	Russian,	Outside laborer,	39	M.	1		Underwood,		Fatally injured. The wooden trestle gave way under the weight of two loaded rock cars, throwing Arwisky and the two cars down the rock dump. Died two hours later. Outside.
11	Felix Weitera,	German,	Miner,	26	S.			Pennsylvania No. 1,		Fatally injured by premature blast at face of chamber, which was ignited by gas. Died in hospital January 16.
Feb. 3	Benjamin Jacques,	English,	Timberman,	59	M.	1		Storrs,		Killed by fall of roof on abandoned gangway while taking down trolley wire.
19	Anthony Polmansky,	Polish,	Miner,	49	M.	1	1	Johnson,		Killed by being crushed against roof and wooden cog by coal crushed from pillar in pillar place.
	Albert Mazolinski,	Polish,	Laborer,	40	M.	1	3			
Mar. 6	John Pencofskey,	Polish,	Miner,	30	M.	1		Pennsylvania No. 1,	Lackawanna,	Fatally injured by fall of top coal in pillar work while undermining after a blast. Died same day.
7	Joseph Polovish,	Polish,	Miner,	58	M.	1	1	Storrs,		Arm cut off by fall of roof near face of chamber while restanding prop that had been discharged by a blast. Died in hospital March 10.
April 4	Adalbert Darlak,	American,	Slatepicker,	16	S.			Olyphant Washery,		Fatally injured by being wound around revolving shaft that operates shakers in washery. Died in hospital April 8. Outside.
7	Thomas Kendricks,	English,	Miner,	57	M.	1	3	Olyphant,		Fatally injured by premature blast at face of chamber. Died in hospital April 13.
21	Frank Squarniski,	Russian,	Miner,	49	M.	1	6	Olyphant,		Fatally injured by fall of roof at face of chamber while cleaning place to restand prop that had been discharged by a blast. Died same day.

TABLE 4.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
June 13	Michael Spring,	Russian,	Laborer,	22	M.	1	2	Olyphant,		Killed by fall of roof rock 35 feet back from face of gangway.
27	John Krzynicki,	Polish,	Miner,	36	M.	1	2	Johnson,		Killed by fall of roof rock at face of chamber.
July 10	James Flannery,	American,	Motor brakeman,	19	M.	1		Johnson,		Electrocuted. While getting on motor his lamp on his cap came in contact with the trolley wire.
18	John Botsko,	Russian,	Laborer,	23	S.			Underwood,		Spine fractured by fall of roof rock 75 feet back from face of gangway. Died September 1.
Aug. 8	William Berwick,	American,	Driver,	21	S.			Pennsylvania No. 1,		Killed by being kicked in the chest by a mule that he was driving.
11	Michael Kudrick,	Russian,	Miner,	37	M.	1		Underwood,	Lackawanna,	Killed by fall of roof rock at face of chamber while drilling a hole.
29	Louis Lasevitch,	Polish,	Laborer,	25	S.			Pennsylvania No. 1,		Killed by fall of roof 300 feet back from face of chamber, while cleaning up chamber preparatory to removing pillars.
Nov. 7	Stanley Matscavitch,	Polish,	Laborer,	38	M.	1	1	Storrs,		Electrocuted. He stepped on a charged electric wire 100 feet back from face of airwway.
29	Salvatore Lupetelli,	Italian,	Laborer,	40	S.			Olyphant,		Killed by being struck on head by a prop knocked out by a car that jumped the track alongside of gangway road.
Dec. 23	John Gorboski,	Polish,	Laborer,	28	M.	1	4	Storrs,		Killed by fall of top coal at face of pillar place while shoveling back coal to make place for a set of timber.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 3	Toffel Novocski,	Polish,	Miner,	32	M.	Storrs,		Legs fractured by flying coal from blast at face of chamber.
	John Flatley,	American,	Laborer,	36	S.	Johnson,		Hand and fingers badly cut by falling on sheet-iron in pitch chamber.
10	Anthony Sodosky,	Lithuanian,	Miner,	29	S.	Richmond No. 3,		Face and hands burned by explosion of black powder at face of chamber.
11	John Ferris,	Slavonian,	Laborer,	35	M.	Pennsylvania No. 1,		Head and body injured by flying coal from blast 15 feet from face of chamber.
20	Andrew Orval,	Hungarian,	Miner,	27	M.	Storrs,		Leg fractured. Struck by a piece of rock that slid off gob at face of chamber.
22	Michael Memelski,	Russian,	Laborer,	46	M.	Johnson,		Compound fracture of leg above the foot while assisting others to replace a car on the track.
Feb. 1	Anthony Drulia,	Lithuanian,	Miner,	48	M.	Richmond No. 3,		Injured internally lifting a piece of rock into a car.
7	Michael Sirbiuka,	Slavonian,	Laborer,	49	M.	Pennsylvania No. 1,	Lackawanna,	Compound fracture of leg by fall of roof at face of chamber.
14	Stanley Rodavish,	Lithuanian,	Laborer,	33	S.	Storrs,		Ribs fractured by falling into air shaft in old workings.
Mar. 4	Michael Slavick,	Polish,	Laborer,	21	S.	Richmond No. 3,		Shoulder dislocated by falling prop at face of chamber.
13	Michael Opaullo,	Italian,	Outside laborer,	27	M.	Olyphant,		Three toes fractured by railroad car. Outside.
30	John Howells,	Welsh,	Miner,	60	M.	Storrs,		Big toe crushed by fall of top coal while driving through caved territory.
April 10	John H. Phillips,	Welsh,	Fire boss,	48	M.	Storrs,		Big toe badly crushed by fall of roof rock at face of chamber.
21	Joseph Mozuro,	Polish,	Doorman,	55	S.	Underwood,		Face lacerated, leg bruised and hand crushed. Struck by mine door, which was bumped by motor on main road.
22	James Dermody,	American,	Trackman,	42	M.	Underwood,		Leg fractured below knee. Caught by pump wheel.
22	Anthony Milak,	Polish,	Laborer,	33	M.	Olyphant,		Shoulder dislocated. He slipped and fell at face of chamber.

TABLE 5.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
25	Joseph Morgan,	Welsh,	Miner,	35	M.	Storrs,		Finger blown off by a cap exploding in his hand.
May 20	Walter Metherlavish,	Lithuanian,	Laborer,	44	M.	Richmond No. 3,		Small toe cut off by fall of roof rock at face of chamber.
27	John Berash,	Slavonian,	Miner,	48	M.	Pennsylvania No. 1,		Leg fractured by fall of roof rock, which he was trying to pull down at face of chamber.
June 7	John Lebejeskie,	American,	Planeman,	18	S.	Johnson,		Knee bumped while coupling cars. Outside.
9	Tony Procchi,	Italian,	Miner,	35	M.	Nay-Aug,		Leg fractured by fall of roof rock at face of pillar place.
12	James Austin,	American,	Motor brakeman,	17	S.	Underwood,		Leg fractured. While riding on front end of trip the car jumped the track and he fell between car and rib.
21	John Rodousky,	Polish,	Miner,	27	S.	Pennsylvania No. 1,		Face, arms, and body burned. He rammed a charge of powder into a pitching hole and the cartridge burst and the powder ran out of the hole onto his lighted lamp.
26	Alex Davit,	Polish,	Miner,	39	M.	Storrs,	Lackawanna,	Ankle fractured and scalp and left arm lacerated by flying coal from blast near face of chamber.
July 12	Michael Kuspit,	Russian,	Miner,	26	S.	Nay-Aug,		Injured internally. Caught between roof and top of mine car on gangway road.
24	Fred Cowley,	English,	Miner,	53	M.	Storrs,		Pelvis fractured and head lacerated by flying coal from blast at face of gangway.
26	David Richards,	Welsh,	Miner,	42	M.	Richmond No. 3,		Arm crushed, collar bone and jaws fractured and face cut by fall of roof rock at face of chamber.
Aug. 3	Adolf Shafer,	German,	Miner,	45	M.	Pennsylvania No. 1,		Burned by gas at face of abandoned chamber.
7	John Deiter,	German,	Miner,	55	M.	Pennsylvania No. 1,		Burned by black powder, which the miner carelessly ignited near face of chamber.
	Andrew Skratch,	Slavonian,	Laborer,	23	S.			

Aug.	24	Barney Gobin,	Polish,	Motorman,	22	M.	Pennsylvania No. 1,		Pelvis fractured by a trip of mine cars jumping the bumpers on motor.
	25	William Stephan,	German,	Outside laborer,	51	M.	Johnson,		Knee badly crushed while putting derailed car on track. Outside.
Sept.	2	Edward Shultz,	Polish,	Miner,	31	M.	Storrs,		Burned by explosion of gas near face of chamber on pitch place.
	16	Frank Smith,	American,	Breaker boss,	26	M.	Johnson,		Side deeply lacerated while pulling belt on pulley while it was in motion; in breaker. Outside.
	19	Griffith E. Jones,	Welsh,	Bratticeman,	50	M.	Storrs,		Arm fractured. While standing a brattice prop near face of chamber he slipped and fell.
	22	John Senick,	Slavonian,	Laborer,	29	M.	Nay-Aug,		Leg fractured. Struck by car that jumped the track near face of chamber.
	23	Stephen Polesic,	Russian,	Laborer,	39	M.	Olyphant,		Compound fracture of arm. Struck by steel rope near face of chamber.
		Evan Evans,	American,	Driver,	18	S.	Storrs,		Wrist fractured. Caught between collar and top of empty mine car on gangway.
	28	Catal Ross,	Italian,	Laborer,	24	S.	Pennsylvania No. 1,		Leg fractured by fall of roof rock at face of chamber.
	30	Mango Azzorelli,	Italian,	Driver,	20	S.	Pennsylvania No. 1,		Compound fracture of leg below knee. Caught between loaded trip of mine cars at foot of slope.
Oct.	4	Andrew Dombrosky,	Polish,	Laborer,	48	M.	Pennsylvania No. 1,		Compound fracture of arm by fall of roof rock at face of chamber.
	27	William Stackough,	Russian,	Miner,	28	M.	Johnson,	Lackawanna,	Thumb and finger lacerated while pulling block away from car wheel at face of chamber.
	28	Stephen Surilla,	Polish,	Laborer,	21	M.	Olyphant,		Hand lacerated and little finger cut off while pulling block away from car wheel at face of chamber.
Nov.	2	Anthony Yerkvitch,	Polish,	Miner,	41	M.	Olyphant,		Skull and arm fractured and wounds on face and chest by premature blast at face of chamber.
	15	Samuel Bowden,	American,	Motorman,	31	M.	Storrs,		Finger cut off. Caught between bumper of mine car and motor.
	17	Frank Hricko,	American,	Machine oiler,	19	S.	Olyphant Washery,		Arm cut off above elbow. Caught in bevel pinion wheel while in the act of oiling it. Outside.
	17	Robert Garbett,	American,	Loader,	42	M.	Olyphant,		Elbow dislocated. He jumped off railroad box-car and fell and struck his arm against tracks in breaker. Outside.
	21	Charles Sohan,	Slavonian,	Laborer,	28	M.	Carney and Brown,		Arm fractured by fall of roof rock at face of pillar place.
Dec.	27	John Grabertovish,	Lithuanian,	Miner,	45	M.	Richmond No. 3,		Ribs fractured and ear and shoulder cut. Struck by mine car near face of chamber.

CONDITION OF COLLIERIES

PENNSYLVANIA COAL COMPANY

Pennsylvania No. 1 Colliery.—Pennsylvania No. 1 Shaft.—Ventilation, main and chamber roads, drainage and safety conditions, good.

Pennsylvania No. 2 Drift.—Ventilation, main and chamber roads, drainage and safety conditions, good. The principal mining done is robbing pillars.

Gipsy-Grove Shaft.—Ventilation, main and chamber roads, drainage and safety conditions, good. All pillar robbing.

Clark, Marcy and Pittston Slopes—Ventilation, main and chamber roads, drainage and safety conditions, good.

Underwood Colliery.—Underwood Shaft.—Ventilation, main and chamber roads, drainage and safety conditions, good.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Storrs Colliery.—Storrs Nos. 1 and 2 Shafts.—Ventilation, main and chamber roads, drainage and safety conditions, good.

Storrs No. 3 Shaft.—Ventilation and main and chamber roads fair. Drainage and safety conditions, good.

DELAWARE AND HUDSON COMPANY

Olyphant Colliery.—Olyphant Shaft, No. 2 and Miles Slopes.—Ventilation, main and chamber roads, drainage and safety conditions, good.

SCRANTON COAL COMPANY

Johnson and Richmond No. 3, Collieries.—Johnson No. 1 Shaft and No. 2 Slope, and Richmond No. 3 Shaft.—Ventilation, roads, drainage and safety conditions, good. The principal mining done is robbing pillars.

NAY-AUG COAL COMPANY

Nay-Aug Colliery.—Nau-Aug No. 1 Slope and Nos. 2 and 3 Drifts.—Ventilation good. Roads, drainage and safety conditions, fair. Robbing pillars.

SPENCER COAL COMPANY

Spencer Colliery.—Spencer Nos. 1 and 2 Shafts.—Ventilation good Roads, drainage and safety conditions, fair. Robbing pillars.

CARNEY AND BROWN COAL COMPANY

Carney and Brown Colliery.—Marcy and Clark Slopes.—Ventilation, roads, drainage and safety conditions, fair. Robbing pillars.

NO. 6 COAL COMPANY

No. 6 Colliery.—No. 6 Slope.—Ventilation and drainage, good. Safety conditions, fair. Robbing pillars.

IMPROVEMENTS

DELAWARE AND HUDSON COMPANY

Olyphant Colliery.—The breaker is being remodeled. A tunnel, 325 feet long, was driven from Five Foot vein to 20 Inch vein. No. 15 plane was extended 190 feet from Clark vein to New County vein. Two 7-ton electric locomotives were installed in Dunmore vein, and two in New County vein. Three coal-cutting machines were also installed.

SCRANTON COAL COMPANY

Johnson Colliery.—Removed 75 feet of roof 10 feet wide and 3 feet thick in the Dunmore No. 3 vein at the foot of No. 1 plane, for the purpose of grading the road so that the electric motor could be used to haul the cars on the plane instead of the rope.

Removed 200 feet of bottom rock 10 feet wide and 4 feet thick in the Dunmore No. 2 vein for the purpose of using electric motor for haulage on slope instead of rope.

The second opening shaft was recribbed, and the brattice between the upcast and downcast renewed from top to bottom.

Two Scranton pumps 10 by 18 by 22 were installed in the Big vein for emergency purposes.

CARNEY AND BROWN COAL COMPANY

Carney and Brown Colliery.—The old breaker was destroyed by fire November 26, 1915, and a new 250-ton capacity breaker was erected and started operations September, 1916.

SEVENTH DISTRICT

LACKAWANNA AND LUZERNE COUNTIES

Rendham, Pa., February 24, 1917.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: In compliance with the act of April 14, 1903, I have the honor to transmit to you my report as Inspector of Mines for the Seventh Anthracite District, for the year ending December 31, 1916.

Respectfully submitted,

AUGUSTUS McDADE,
Inspector.

SUMMARY OF STATISTICS

Number of collieries,	10
Number of mines,	24
Number of mines in operation,	24
Number of gaseous mines in operation,	11
Number of non-gaseous mines in operation,	13
Number of tons of coal shipped to market,	2,563,166
Number of tons used at mines for steam and heat,	192,469
Number of tons sold to local trade and used by employes,	48,700
Number of tons produced,	2,804,335
Number of tons produced by compressed air machines,	.....
Number of tons produced by electrical machines,	166,666
Number of persons employed inside of mines,	4,468
Number of persons employed outside,	1,239
Number of persons employed inside between 16 and 21 years,	234
Number of persons employed outside between 14 and 21 years,	414
Number of fatal accidents inside,	15
Number of fatal accidents outside,	2
Number of non-fatal accidents inside,	37
Number of non-fatal accidents outside,	3
Number of tons of coal produced per fatal accident inside,	186,956
Number of tons produced per fatal accident inside and outside,	164,961
Number of persons employed per fatal accident inside,	298
Number of persons employed per fatal accident outside,	620
Number of persons employed per fatal accident inside and outside,	336
Number of persons employed per non-fatal accident inside,	121
Number of persons employed per non-fatal accident outside,	413
Number of persons employed per non-fatal accident inside and outside,	143
Number of wives made widows,	14
Number of children made orphans,	46
Number of steam locomotives inside,	.....
Number of steam locomotives outside,	9
Number of compressed air locomotives inside,	.....
Number of compressed air locomotives outside,	.....
Number of electric motors inside,	77
Number of electric motors outside,	.....
Number of gasoline locomotives inside,	.....
Number of gasoline locomotives outside,	.....
Number of cylindrical boilers,	.....
Number of tubular boilers,	97
Number of steam engines of all classes,	137
Number of internal combustion engines (gas),	.....
Number of electric dynamos,	8

Number of pumps of all classes,	94
Number of pumps delivering water to surface,	33
Number of air compressors,	4
Number of fans in use,	19
Number of new mines opened,	.....
Number of old mines abandoned,	3

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Delaware, Lackawanna and Western Railroad Company,	1,090,122
Pennsylvania Coal Company,	937,783
Jermyn and Company,	433,377
Delaware and Hudson Company (including Hudson Coal Company),	204,017
Hillside Coal and Iron Company,	129,942
Lehigh Valley Coal Company,	9,094
Total,	2,804,335

Production by Counties

Lackawanna,	1,999,431
Luzerne,	804,904
Total,	2,804,335

TABLE B.—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Total number of employes	Number of employes inside per fatal accident	Number of employes outside per fatal accident	Number of employes inside per non-fatal accident	Number of employes outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Delaware, Lackawanna and Western Railroad Co.,	6	2	8	13	------	13	181,087	83,856	1,735	413	2,148	289	207	134	--------
Pennsylvania Coal Co.,	5	------	5	7	1	8	187,557	133,969	1,378	441	1,819	276	--------	197	441
Jermyn and Co.,	2	------	2	11	2	13	216,689	39,398	717	158	875	359	--------	65	79
Delaware and Hudson Co. (Including Hudson Coal Co.,	2	------	2	4	------	4	102,009	51,004	415	128	543	208	--------	104	--------
Hillside Coal and Iron Co.,	------	------	------	1	------	1	----------	129,942	190	93	283	----------	--------	190	--------
Lehigh Valley Coal Co.,	------	------	------	1	------	1	----------	9,094	33	6	39	----------	--------	33	--------
Totals and averages,	15	2	17	37	3	40	186,956	75,793	4,468	1,239	5,707	298	620	121	413

TABLE C.—Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,	----	----	----	----	----	----	----	----	----	----	1	----	1	6.67
Falls of roof,	3	----	----	----	----	1	2	----	2	1	----	----	9	60.00
Mine cars,	----	----	----	----	1	----	1	----	----	----	1	1	4	26.67
Blasts, premature and otherwise,	----	----	----	----	----	----	----	----	1	----	----	----	1	6.66
Totals,	3	----	----	----	1	1	3	----	3	1	2	1	15	100.00
Outside														
Cars,	----	----	1	----	----	----	----	----	----	----	----	----	1	50.00
Suffocation in chutes, etc.,	----	1	----	----	----	----	----	----	----	----	----	----	1	50.00
Totals,	----	1	1	----	----	----	----	----	----	----	----	----	2	100.00
Grand totals,	3	1	1	----	1	1	3	----	3	1	2	1	17	----

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,	1	----	----	1	----	1	1	----	----	----	----	----	4	10.81
Falls of roof,	----	1	2	2	1	1	----	1	----	3	2	1	14	37.83
Mine cars,	1	----	----	----	1	----	2	1	----	----	----	1	6	16.22
Explosions of powder and dynamite,	----	1	----	----	----	----	1	----	----	----	----	----	2	5.41
Blasts, premature and otherwise,	----	----	----	1	----	----	----	1	2	----	----	----	4	10.82
Mules,	----	----	1	----	----	----	----	----	----	----	----	----	1	2.70
Struck by rock,	----	----	----	----	----	1	----	----	----	----	----	----	1	2.70
Struck by coal,	----	----	1	1	----	----	----	----	----	----	----	----	2	5.41
Cage,	----	1	----	----	----	----	----	----	----	----	----	----	1	2.70
By falling,	----	1	----	----	1	----	----	----	----	----	----	----	2	5.40
Totals,	2	4	4	5	3	3	4	3	2	3	2	2	37	100.00
Outside														
Struck by coal,	----	----	----	1	----	----	----	----	----	----	----	----	1	33.34
By falling,	1	----	----	----	----	----	----	----	----	----	----	----	1	33.33
Rush of culm,	1	----	----	----	----	----	----	----	----	----	----	----	1	33.33
Totals,	2	----	----	1	----	----	----	----	----	----	----	----	3	100.00
Grand totals,	4	4	4	6	3	3	4	3	2	3	2	2	40	----

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,	2					1	1		2		1		7
Miners' laborers,	1						2		1	1	1		6
Drivers and runners,					1								1
Doorboys and helpers,												1	1
Totals,	3				1	1	3		3	1	2	1	15
Outside													
Engineers and firemen,		1											1
Loaders,			1										1
Totals,		1	1										2
Grand totals,	3	1	1		1	1	3		3	1	2	1	17

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,	1	2		2	2	2	2	2	2	2	1	1	19
Miners' laborers,		2	3	3		1		1		1	1	1	13
Drivers and runners,	1		1				1						3
Trackmen and bratticemen,					1		1						2
Totals,	2	4	4	5	3	3	4	3	2	3	2	2	37
Outside													
Foremen,	1												1
Slatepickers (boys),	1												1
Laborers,				1									1
Totals,	2			1									3
Grand totals,	4	4	4	6	3	3	4	3	2	3	2	2	40

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
English,									1				1
Polish,		1	1				2			1			5
Italian,									1		2	1	4
Lithuanian,	1								1				2
Austrian,	2						1						3
Russian,					1	1							2
Totals,	3	1	1		1	1	3		3	1	2	1	17

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	1	1	1		1		1		1	1			7
Welsh,	1												1
Polish,	1	3	1	3			3	1		2	2		16
Italian,				2		1						1	4
Slavonian,			1			1		1					3
Lithuanian,									1				1
Austrian,					1			1					2
Russian,	1		1	1	1							1	5
Swedish,						1							1
Totals,	4	4	4	6	3	3	4	3	2	3	2	2	40

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and Types of Safety Lamps Used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Delaware, Lackawanna and Western Railroad Co. Taylor Colliery:										
Taylor,	Lackawanna,	G or Diamond,	60							
		F or Rock,	72							
		E or Big,	48		300	8		Gaseous,	14	
		D or New County,	96							
		C or Clark,	60							
		B or Dunmore No. 1,	54	197						
Pyne Colliery:										
Pyne,	Lackawanna,	D or New County,	113					Gaseous,	18	
		C or Clark,	179							
		B or Dunmore No. 1,	49	303	700	22.5				
		E or Big,	77							
Halstead Colliery:										
Halstead,	Luzerne,	C or Ross,	48					Gaseous,		
		D or New County,	72				Drift,	Gaseous,	12	
		B or Red Ash No. 1,	36							
		B or Red Ash No. 2,	48					Gaseous,		
		B or Red Ash No. 3,	36	230						
Pennsylvania Coal Co. Old Forge Colliery:										
Old Forge No. 1,	Lackawanna,	B or Top Red Ash,	42					Non-gas.,		
		B or Middle Red Ash	60					Non-gas.,		
		B or Bottom Red Ash	96	192				Non-gas.,		

TABLE I—Continued.

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and Types of Safety Lamps Used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average degrees pitch—			Flame	Electric
Old Forge No. 2,	Lackawanna,	B or Middle Red Ash,	96	197				Non-gas.,		
Mountain,	Lackawanna,	D or Marcy,	93				Drift,	Non-gas.,		
Mountain,	Lackawanna,	C or Clark,	68				Drift,	Non-gas.,		
Coray,	Lackawanna,	D or Marcy,	102					Non-gas.,		
Coray,	Lackawanna,	C or Clark,			430	14.5		Non-gas.,		
Central Colliery:										
Law,	Luzerne,	D or Marcy,	72					Non-gas.,		
		C or Clark,	72		1,850	3.75		Non-gas.,		
		C or Clark,	60					Non-gas.,		
Law,	Luzerne,	B or Top Red Ash,	60					Non-gas.,		
No. 13,	Luzerne,	B or Middle Red Ash	60	226				Non-gas.,		
		B or Top Red Ash,	42	140				Non-gas.,		
Sibley Colliery:										
Sibley,	Lackawanna,	D or Marcy,	95					Non-gas.,		
		C or Clark,	84					Non-gas.,		
		B or Middle Red Ash	42					Non-gas.,		
		B or Bottom Red Ash	42	278				Non-gas.,		
Jermyn and Co. Jermyn Colliery:										
Jermyn No. 1,	Lackawanna,	C or Clark (Upper),	60					Non-gas.,	1	
		C or Clark (Lower),	36					Gaseous,	1	
		B or Dunmore No. 2,	60	208				Gaseous,	1	

Jermyn No. 1,	Lackawanna,	C or Clark (Upper),	60				Non-gas.,	1	
		C or Clark (Lower),	36				Gaseous,	1	
		B or Dunmore No. 2,	60	380	17.5		Gaseous,	1	
		B or Dunmore No. 1,	60				Gaseous,	1	
Jermyn No. 2,	Lackawanna,	B or Dunmore No. 2,	60				Gaseous,	1	
		B or Dunmore No. 3,	60	220			Gaseous,	1	
Jermyn No. 3,	Lackawanna,	C or Clark (Lower),	48				Gaseous,	1	
		B or Dunmore No. 3	96	262			Gaseous,	1	
Delaware and Hudson Co. (Including Hudson Coal Co.) Langcliffe Colliery:									
		B or Stark,	120				Non-gas.,		
Langcliffe,	Luzerne,	B or Red Ash,	60	134			Non-gas.,		
		B or Stark,	120				Non-gas.,		
Moosic,	Luzerne,	B or Red Ash,	60	98			Gaseous,	1	
Hillside Coal and Iron Co. Consolidated Colliery:									
		C or Clark,	48						
Consolidated,	Luzerne,	B or Stark,	36	1,750	8.75		Non-gas.,		
		B or Red Ash,	36	2,050	8.5		Non-gas.,		
		B or Stark,	38	440	17		Non-gas.,		
Lehigh Valley Coal Co. Austin Colliery:									
Austin,*	Lackawanna,					Drift,	Non-gas.,		

*Exhausted.

TABLE I—Continued.

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Delaware, Lackawanna and Western Railroad Co.												
Taylor Colliery:												
Taylor,	Lackawanna,	G or Diamond, F or Rock, E or Big, D or New County, C or Clark, B or Dunmore No. 1,	Guibal,	25	60	1.	Steam,	277,430	309,290	224,680	13	746
Pyne Colliery:												
Pyne,	Lackawanna,	D or New County, C or Clark, B or Dunmore No. 1,	Guibal,	24	72	2.1	Steam,	183,350	200,900	167,950	8	678
		E or Big,	Guibal,	16	90	.9	Steam,	24,400	27,600	24,150	2	
Halstead Colliery:												
Halstead,	Luzerne,	C or Ross, D or New County, B or Red Ash No. 1,	Open,	18	105	1.3	Steam,	102,927	118,200	117,860	9	241
		B or Red Ash No. 2, B or Red Ash No. 3,	Open,	12	85	.6	Steam,	32,465	35,400	‡	1	70
Pennsylvania Coal Co.												
Old Forge Colliery:												
Old Forge No. 1,	Lackawanna,	B or Top Red Ash, B or Middle Red Ash, B or Bottom Red Ash	Guibal,	20	52	.8	Steam,	67,300	70,900	63,300	5	238

‡Robbing.

Old Forge No. 2,	Lackawanna,	B or Middle Red Ash,	Guibal,	20	55	1.	Electricity,	68,370	73,360	59,315	3	100
Mountain,	Lackawanna,	D or Marcy,	Guibal,	20	59	1.	Electricity,	29,930	32,000	29,730	1	24
Mountain,	Lackawanna,	C or Clark,						71,875	76,950	71,150	4	173
Coray,	Lackawanna,	D or Marcy,	Guibal,	14	70	.5	Electricity,	40,800	42,400	38,950	3	93
Coray,	Lackawanna,	C or Clark,										
Central Colliery:												
Law,	Luzerne,	D or Marcy, C or Clark,										
		C or Clark,	Guibal,	20	50	1.5	Steam,	103,530	108,550	103,000	7	227
Law,	Luzerne,	B or Top Red Ash, B or Middle Red Ash										
No. 13,	Luzerne,	B or Top Red Ash,	Guibal,	20	60	.6	Steam,	35,126	35,236	34,700	2	76
Sibley Colliery:												
Sibley,	Lackawanna,	D or Marcy, C or Clark, B or Middle Red Ash, B or Bottom Red Ash	Guibal,	20	70	1.5	Electricity,	122,350	130,050	118,550	10	167
Jermyn and Co.												
Jermyn Colliery:												
Jermyn No. 1,	Lackawanna,	C or Clark (Upper), C or Clark (Lower), B or Dunmore No. 2,	Guibal,	14	90	1.1	Steam,	107,600	117,900	‡	5	333
Jermyn No. 2,	Lackawanna,	B or Dunmore No. 1, B or Dunmore No. 2, B or Dunmore No. 3,	Guibal,	18	90	1.	Steam,	103,600	123,300	‡	5	258
Jermyn No. 3,	Lackawanna,	C or Clark (Lower), B or Dunmore No. 3,	Guibal,	18	53	.8	Steam,	70,000	105,000	‡	2	120
Delaware and Hudson Co. (Including Hudson Coal Co.)												
Langcliffe Colliery:												
Langcliffe,	Luzerne,	B or Stark, B or Red Ash, B or Stark,	Guibal,	17	60	.4	Steam,	44,000	38,300	46,500	3	346
Moosic,	Luzerne,	B or Red Ash,	Guibal,	30	90	.2	Steam,	35,800	34,925	41,200	2	
Hillside Coal and Iron Co.												
Consolidated Colliery:												
Consolidated,	Luzerne,	C or Clark, B or Stark,					Natural,	16,200	19,300	15,876	2	44
		B or Red Ash,	Guibal,	14	85	.6	Steam,	29,000	32,700	25,900	2	109
		B or Stark,					Natural,	10,250	11,300	9,280		18
Lehigh Valley Coal Co.												
Austin Colliery:												
Austin,*	Lackawanna,		Guibal,	8	120	.3	Electricity,	15,000	18,350	12,680	1	33

*Exhausted.
‡Robbing.

TABLE J.—Operators and mines, name of coal bed, kind of openings, mining machines used, and approximate number of tons produced by machines

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of opening	Gaseous or non-gaseous	Mining Machines		Approximate number of tons produced by machines
						Electric	Compressed air	
Delaware, Lackawanna and Western Railroad Co.								
Taylor,	Lackawanna,	G or Diamond,	60	Shaft,	Gaseous,	10		140,180
Pyne,	Lackawanna,	G or Diamond,	60	Shaft,	Gaseous,	3		23,667
Totals,						13		163,847
Pennsylvania Coal Co.								
Old Forge,	Lackawanna,	B or Middle Red Ash,	42	Shaft,	Non-gas.,	2		2,819
Grand totals,						15		166,666

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	General Superintendent	Post Office	Superintendent	Post Office	Railroad to Mine
Delaware, Lackawanna and Western Railroad Co.						
Taylor,	Lackawanna,	William W. Inglis,	Scranton,	W. E. Watkins,	Scranton,	D. L. and W.
Pyne,	Lackawanna,			F. A. Gleason,	Taylor,	
Halstead,	Luzerne,			F. A. Gleason,	Taylor,	
Pennsylvania Coal Co.						
Old Forge,	Lackawanna,	Joseph P. Jennings,	Scranton,	Floyd G. Wilcox,	Moosic,	Erie
Central,	Luzerne,			Patrick H. O'Brien,	Avoca,	
Sibley,	Lackawanna,			Floyd G. Wilcox,	Moosic,	
Jermyn and Co.						
Jermyn,	Lackawanna,	Joseph J. Jermyn,	Scranton,	John P. Corcoran,	Rendham,	Erie
Delaware and Hudson Co. (Including Hudson Coal Co.)						
Langcliffe,	Luzerne,	C. Evans, Jr., Inside; Charles Dorrance, Outside	Scranton,	Joseph Linney,	Avoca,	Delaware and Hudson
Hillside Coal and Iron Co.						
Consolidated,	Luzerne,	Joseph P. Jennings,	Scranton,	John B. Jones,	Avoca,	Erie
Lehigh Valley Coal Co.						
Austin,	Lackawanna,	Thomas Thomas,	Wilkes-Barre,	W. D. Owens,	Pittston,	Lehigh Valley

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives		
										Pounds of black powder used	Pounds of dynamite used	Pounds of permissible explosives used
Delaware, Lackawanna and Western Railroad Co.												
Taylor,	Lackawanna,	464,473	18,239	9,473	492,185	276	896	1	4	372,800	32,960	36,223
Pyne,	Lackawanna,	407,778	20,108	2,339	430,225	270	831	4	6	328,375	10,184	
Halstead,	Luzerne,	151,048	13,934	2,730	167,712	267	421	3	3	89,800	79,347	
Totals,		1,023,299	52,281	14,542	1,090,122		2,148	8	13	790,975	122,491	36,223
Pennsylvania Coal Co.												
Old Forge,	Lackawanna,	547,183	45,340	14	592,537	285	1,168	4	4	471,000	1,102	44,015
Central,	Luzerne,	283,451	18,927	855	303,233	286	651		3	322,700	14,668	1,000
Sibley,	Lackawanna,	29,307	9,425	3,281	42,013	73	*	1	1	78,400	96	17,800
Totals,		859,941	73,692	4,150	937,783		1,819	5	8	872,100	15,866	62,815
Jermyn and Co.												
Jermyn,	Lackawanna,	372,258	44,575	16,544	433,377	279	875	2	13	265,625	84,050	
Delaware and Hudson Co. (Including Hudson Coal Co.)												
Langcliffe,	Luzerne,	188,055	13,079	2,883	204,017	273	543	2	4	144,525	13,359	157,884

*Included with Old Forge.

Hillside Coal and Iron Co. Consolidated,	Luzerne,	110,519	8,842	10,581	129,942	270	283		1	130,100		7,864
Lehigh Valley Coal Co. Austin,	Lackawanna,	9,094			9,094	†	39		1	4,500	1[illegible]	
Grand totals,		2,563,166	192,469	48,700	2,804,335		5,707	17	40	2,207,825	235,[illegible]46	264,786

†Coal prepared at William A. breaker, Ninth District.

TABLE 2.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Names of Operators	County	Power Plant									Pumps				Haulage					Air Compressors	
		Boilers				Engines										Locomotives					
		Cylindrical		Tubular		Steam Engines (All Classes)		Internal Combustion Engines (Gas)		Electric Dynamos (All Classes)			Pumps Delivering Water to the Surface								
		Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total kilowatts	Number	Total capacity in gallons per minute	Number	Approximate number of gallons per minute	Number of horses and mules	Gasoline	Steam	Air	Electric	Number	Total capacity in cubic feet per minute
Delaware, Lackawanna and Western Railroad Co.,	Lackawanna, Luzerne,			27	4,795	40	2,875			1		13	14,280	9	8,620	136		1		35		
Pennsylvania Coal Co.,	Lackawanna, Luzerne,			45	5,930	33	4,300			5	2,225	57	32,000	17	14,500	59		6		42	1	96
Jermyn and Co.,	Lackawanna,			4	2,000	25	1,959			1	50	16	8,300	3	6,000	73					1	1,500
Delaware and Hudson Co. (Including Hudson Coal Co.),	Luzerne,			9	1,100	25	697			1		3	1,600	3	400	74					1	
Hillside Coal and Iron Co.,	Luzerne,			12	900	12	850					4	1,100			33		2			1	890
Lehigh Valley Coal Co.,	Lackawanna,					2	32					1	500	1	450	10						
Totals,				97	14,725	137	10,713			8	2,275	94	57,780	33	29,970	385		9		77	4	2,486

TABLE 3.—Part 1.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside																Total inside	Outside											Total outside	Grand total inside and outside
		Mine foremen	Assistant mine foremen	Fire bosses	Miners	Miners' laborers	Machine miners	Machine runners and scrapers	Drivers and runners	Motormen and assistants	Doorboys and helpers	Trackmen and brattiemen	Timbermen and rockmen	Pumpmen and pipemen	Electricians and helpers	All other employes		Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Machinists and helpers	Trackmen and helpers	Slate pickers (boys)	Slate pickers (men)	Office employes	All other employes			
Delaware, Lackawanna and Western Railroad Co.,	Lackawanna, Luzerne,	4	27	----	509	631	26	29	101	74	21	45	12	20	10	226	1,735	1	4	23	38	3	----	126	1	12	205	413	2,148
Pennsylvania Coal Co.,	Lackawanna, Luzerne,	6	13	----	563	473	----	1	25	84	17	36	60	29	12	59	1,378	2	2	42	39	15	11	85	19	7	219	441	1,819
Jermyn and Co.,	Lackawanna,	2	2	14	219	260	20	4	61	----	28	16	10	11	----	70	717	2	1	11	18	3	2	30	20	7	64	158	875
Delaware and Hudson Co. (Including Hudson Coal Co.,	Luzerne,	1	1	1	151	182	----	----	54	----	----	3	4	3	----	15	415	1	2	8	14	1	----	18	16	2	66	128	543
Hillside Coal and Iron Co.,	Luzerne,	1	1	----	95	55	----	----	19	----	1	5	1	----	----	12	190	----	1	8	11	3	2	18	1	2	47	93	283
Lehigh Valley Coal Co.,	Lackawanna,	1	----	----	13	13	----	----	3	----	----	1	1	----	----	1	33	----	1	----	1	----	----	----	----	----	4	6	39
Totals,		15	44	15	1,550	1,614	46	34	263	158	67	106	88	63	22	383	4,468	5	11	92	121	25	15	277	57	30	605	1,239	5,707

TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Totals
Delaware, Lackawanna and Western Railroad Co.,	Lackawanna, Luzerne,	22	21	26	10	23	24	24	25	24	24	24	23	270
Pennsylvania Coal Co.,	Lackawanna, Luzerne,	23	22	25	25	25	26	23	25	21	24	23	23	285
Jermyn and Co.,	Lackawanna,	24	23	27	23	18	24	23	24	19	25	25	24	279
Delaware and Hudson Co. (Including Hudson Coal Co.),	Luzerne,	23	24	20	20	25	25	25	22	21	22	23	23	273
Hillside Coal and Iron Co.,	Luzerne,	22	22	24	23	23	23	22	23	21	24	22	21	270
Lehigh Valley Coal Co.,	Lackawanna,	*												

*Coal prepared at William A. breaker, Ninth District.

TABLE 4.—Fatal Accidents Inside and Outside of Mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 21	George Robusky,	Austrian,	Miner,	44	M.	1	6	Sibley,	Lackawanna,	Killed by fall of roof at face of chamber.
25	Jacob Bereencavich,	Lithuanian,	Miner,	59	M.	1		Jermyn,	Lackawanna,	Killed by fall of roof at face of chamber.
27	Mike Maliezrweka,	Austrian,	Laborer,	35	M.	1	4	Pyne,	Lackawanna,	Killed by fall of roof at face of chamber.
Feb. 26	Alex Wycavish,	Polish,	Fireman,	33	M.	1	2	Halstead,	Luzerne,	Suffocated under coal in fire room. Outside.
Mar. 24	John Fostock,	Polish,	Loader,	36	M.	1	8	Halstead,	Luzerne,	Fatally injured by railroad cars. Outside.
May 8	Mike Yumchuck,	Russian,	Runner,	19	S.			Pyne,	Lackawanna,	Killed by cars on gangway.
June 13	William Dobyees,	Russian,	Miner,	34	M.	1	3	Taylor,	Lackawanna,	Killed by fall of roof at face of chamber.
July 13	Andrew Zigmend,	Austrian,	Miner,	43	M.	1	4	Old Forge,	Lackawanna,	Killed by fall of roof at face of chamber.
18	Michael Rumanovitch,	Polish,	Laborer,	23	S.			Langcliffe,	Luzerne,	Killed by cars on gangway.
31	Joseph Baldigo,	Polish,	Laborer,	30	M.	1	4	Halstead,	Luzerne,	Killed by fall of roof at face of chamber.
Sept. 1	Frank Heynew,	Lithuanian,	Laborer,	37	M.	1	2	Pyne,	Lackawanna,	Killed by fall of roof in chamber.
11	John Gresco,	Italian,	Laborer,	30	M.	1	3	Jermyn,	Lackawanna,	Killed by explosion of blast in chamber.
18	David Heckman,	English,	Miner,	38	M.	1	2	Langcliffe,	Luzerne,	Killed by fall of roof at face of pillar.
Oct. 19	Clement Ademick,	Polish,	Miner,	34	M.	1	2	Pyne,	Lackawanna,	Killed by fall of roof at face of gangway.
Nov. 6	M. Rocco,	Italian,	Laborer,	27	M.	1	1	Old Forge,	Lackawanna,	Killed by fall of coal on pillar work.
6	Tony Vilardie,	Italian,	Miner,	52	M.	1	5	Old Forge,	Lackawanna,	Killed by cars on gangway.
Dec. 19	Serafin Terolli,	Italian,	Doorboy,	18	S.			Old Forge,	Lackawanna,	Killed by cars on gangway.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 3	John Micklas,	American,	Runner,	18	S.	Langcliffe,	Luzerne,	Pelvis fractured by cars on gangway.
8	Anthony Mostosky,	Polish,	Miner,	30	M.	Jermyn,	Lackawanna,	Foot crushed by fall of coal at face of chamber.
19	Charles Llewellyn,	Welsh,	Foreman,	39	M.	Jermyn,	Lackawanna,	Leg fractured by rush of frozen culm. Outside.
26	John Cowalchnck,	Russian,	Slatepicker,	16	S.	Sibley,	Lackawanna,	Leg fractured by falling down steps. Outside.
Feb. 3	John Deobinskie,	Polish,	Miner,	31	M.	Pyne,	Lackawanna,	Rib fractured by falling in chamber.
4	Jacob Slatskie,	Polish,	Laborer,	48	M.	Halstead,	Luzerne,	Leg fractured. Struck by cage while in sump.
	Edward McAndrew,	American,	Miner,	34	M.	Central,	Luzerne,	Face and hands burned by an explosion of powder in chamber.
11	Thomas Ambrose,	Polish,	Laborer,	29	S.	Pyne,	Lackawanna,	Ankle fractured by fall of roof at face of chamber.
Mar. 3	Andrew Sinko,	Slavonian,	Laborer,	26	M.	Taylor,	Lackawanna,	Leg fractured by fall of roof at face of chamber.
9	Harry Mashasky,	Russian,	Laborer,	48	M.	Jermyn,	Lackawanna,	Ankle fractured by coal rolling on him in chamber.
11	Toney Glick,	Polish,	Laborer,	42	M.	Taylor,	Lackawanna,	Toe injured by fall of roof in chamber.
14	Frank Bender,	American,	Driver,	18	S.	Pyne,	Lackawanna,	Jaw fractured. Kicked by a mule on gangway.
April 4	Charles Corfotte,	Italian,	Miner,	35	M.	Old Forge,	Lackawanna,	Leg fractured by fall of roof in chamber.
5	Henry Schenskiee,	Polish,	Laborer,	21	M.	Austin,	Lackawanna,	Leg fractured by fall of coal on pillar work.
	Angelo Venanzi,	Italian,	Laborer,	39	M.	Jermyn,	Lackawanna,	Hand injured by fall of roof at face of chamber.
14	Frank Cripli,	Polish,	Miner,	42	M.	Jermyn,	Lackawanna,	Ribs fractured by an explosion of blast on pillar work.
	Andrew Serock,	Russian,	Laborer,	40	M.	Jermyn,	Lackawanna,	Finger fractured by a piece of rock rolling on him. Outside.
29	Joseph Dinvetch,	Polish,	Laborer,	38	S.	Pyne,	Lackawanna,	Ankle fractured by a piece of coal rolling on him in chamber.
May 2	John Lungazo,	Russian,	Miner,	39	M.	Jermyn,	Lackawanna,	Leg fractured by fall of roof at face of chamber.

May	9	Joseph Pepsin,	Austrian,	Miner,	25	M.	Taylor,	Lackawanna,	Arm fractured by falling in chamber.
	10	John J. Evans,	American,	Tracklayer,	40	M.	Pyne,	Lackawanna,	Ear cut off by cars in chamber.
June	6	Raymond Beicher,	Swedish,	Miner,	38	M.	Pyne,	Lackawanna,	Leg fractured by fall of coal at face of chamber.
	14	Chris Dudley,	Slavonian,	Laborer,	21	S.	Consolidated,	Luzerne,	Leg fractured. Struck by flying piece of rock in chamber.
	22	Andrew Grala,	Italian,	Miner,	44	M.	Jermyn,	Lackawanna,	Finger cut off by fall of roof at face of chamber.
July	11	John Manleck,	Polish,	Miner,	43	M.	Langcliffe,	Luzerne,	Face and hands burned by an explosion of dynamite in chamber.
	17	George Yoyle,	American,	Runner,	19	S.	Halstead,	Luzerne,	Ankle fractured by cars on gangway.
	19	Michael Ferrett,	Polish,	Miner,	39	M.	Jermyn,	Lackawanna,	Jaw fractured by fall of coal at face of chamber.
	22	Harry Pastwyanak,	Polish,	Tracklayer,	26	M.	Old Forge,	Lackawanna,	Pelvis fractured by cars on gangway.
Aug.	8	Stanley Varminiskie,	Polish,	Laborer,	19	S.	Old Forge,	Lackawanna,	Head lacerated by cars on gangway.
	19	John Kosgo,	Slavonian,	Miner,	35	M.	Taylor,	Lackawanna,	Hand blown off by an explosion of blast on pillar work.
	21	John Kapiptiniski,	Austrian,	Miner,	39	M.	Central,	Luzerne,	Spine injured by fall of roof in chamber.
Sept.	11	Charles Cartright,	American,	Miner,	28	M.	Jermyn,	Lackawanna,	Body seriously injured by an explosion of blast at face of chamber.
	26	William Yankowski,	Lithuanian,	Miner,	26	M.	Jermyn,	Lackawanna,	Arm fractured by an explosion of blast at face of chamber.
Oct.	5	Frank Kane,	American,	Miner,	37	M.	Central,	Luzerne,	Ribs fractured by fall of roof at face of chamber.
	11	Stanley Yakovitz,	Polish,	Miner,	51	M.	Langcliffe,	Luzerne,	Hip dislocated by fall of roof at pillar work.
	25	Walter Denarvitch,	Polish,	Laborer,	37	M.	Jermyn,	Lackawanna,	Leg and elbow injured by fall of roof on pillar work.
Nov.	9	Felix Moselisky,	Polish,	Laborer,	24	M.	Jermyn,	Lackawanna,	Leg fractured by fall of roof on pillar work.
	16	John Pekarksky,	Polish,	Miner,	38	M.	Langcliffe,	Luzerne,	Leg fractured by fall of roof on gangway.
Dec.	13	Mike Koesk,	Russian,	Miner,	37	M.	Halstead,	Luzerne,	Vertebrae fractured by fall of roof at face of chamber.
	27	John Boegi,	Italian,	Laborer,	20	S.	Old Forge,	Lackawanna,	Ankle fractured by cars on gangway.

CONDITION OF COLLIERIES

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Taylor and Pine Collieries.—Ventilation, drainage and condition as to safety, good. Pillars are being extracted.

Halstead Colliery.—Ventilation and drainage, good. Condition as to safety, fair. Pillars are being mined.

PENNSYLVANIA COAL COMPANY

Old Forge and Sibley Collieries.—Ventilation, drainage and condition as to safety, good. Pillars are being removed.

Central Colliery.—Ventilation, drainage and general condition, good. Pillars are being mined.

JERMYN AND COMPANY

Jermyn Colliery.—Ventilation, drainage and condition as to safety, good. Mining pillars extensively.

DELAWARE AND HUDSON COMPANY (INCLUDING HUDSON COAL COMPANY)

Langcliffe Colliery.—Ventilation, drainage and condition as to safety, good. Mining pillars exclusively.

HILLSIDE COAL AND IRON COMPANY

Consolidated Colliery.—Ventilation, drainage and condition as to safety, good. Pillars are being removed.

LEHIGH VALLEY COAL COMPANY

Austin Colliery.—This mine is exhausted and the opening closed.

IMPROVEMENTS

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Pyne Colliery.—One electric locomotive pit was built in east side of Clark vein for motors working in that section and in No. 1 Dunmore vein, east side.

Three electric locomotives, including one 7½-ton Jeffrey locomotive, were installed in No. 1 Dunmore vein, east side.

One 6½-ton Jeffrey locomotive was installed in No. 1 Dunmore vein, west side.

One 7½-ton General Electric locomotive was installed in New County vein.

PENNSYLVANIA COAL COMPANY

Sibley Colliery.—Outside: The breaker was closed down March 31 and during the summer months the structure was razed to the ground.

Inside: A main haulage-road was made from Old Forge shaft No. 2 workings to Sibley shaft workings, and the coal that is being mined in Sibley shaft is hauled over this road to the foot of Old Forge No. 2 shaft. It is then hoisted to the surface, and from head of the shaft it is pulled by locomotive to Old Forge breaker, where it is prepared.

JERMYN AND COMPANY

Jermyn Colliery.—Outside: One motor generator was installed, and a new wash house was built at No. 2 shaft. Also replaced 60-pound rails on empty and loaded branches above and below the breaker with 90-pound rails.

Inside: A slope was driven from No. 2 to No. 3 Dunmore vein. Opened up No. 3 Dunmore vein at No. 3 shaft. Also installed two coal-cutting machines and an engine at No. 3 shaft.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in the High School, Old Forge, June 6 and 7. The Board of Examiners was composed of Augustus McDade, Inspector, Rendham; David Lloyd, Superintendent, Scranton; Morgan E. Griffiths, Miner, Taylor; Michael Cosgrove, Miner, Old Forge.

The following persons passed a satisfactory examination and were granted certificates:

MINE FOREMEN

Michael Clunnan, George G. Williams, Patrick J. Clunnan, Edward Green, Rendham; David J. Griffiths, George Cavill, Benjamin Jones, Thomas Howells, Evan Jenkins, William T. Rogers, Arthur Whitehouse, Frank Jordan, Taylor; James J. Dixon, Olyphant; John T. Painter, Stephen F. Sick, Ralph Sidney Cordy, Thomas F. Lynch, John Nelson, Martin Lydon, Old Forge; Patrick Loughery, Joseph J. Regan, James J. Dunleavy, Charles Keith, William J. Matthews, Jr., Avoca; Elmer Jones, Plymouth; William Dick, Arthur Harrison Tucker, William Kelly, John Jennings, James Martin, Luther Titus, Frank Jennings, Moosic; John R. Mould, Kingston; Donald D. Cruser, Arthur B. Emanuel Wilkes-Barre; Thomas J. Morgan, Seth Griffiths, Emlyn Davies, Louis H. Leitner, Thomas W. Dawson, William Morgan, Harry Smith, Michael J. Rafferty, Reese Jones, Augustine McGuire, Edward J. Davis, Scranton; Frank Bacher, Duryea; James Pugh, Greenwood; James O'Hara, Minooka.

ASSISTANT MINE FOREMEN

Patrick Murphy, William R. Davis, Samuel Semenza, Old Forge; Steve Paytas, Joseph R. Paytas, Taylor; Thomas Dawson, James Perry, Duryea.

EIGHTH DISTRICT

LUZERNE COUNTY

Pittston, Pa., February 20, 1917.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor to transmit herewith my report as Inspector of Mines for the Eighth Anthracite District for the year ending December 31, 1916.

Respectfully submitted,
ROBT. JOHNSON,
Inspector.

SUMMARY OF STATISTICS

Number of collieries,	8
Number of mines,	28
Number of mines in operation,	28
Number of gaseous mines in operation,	20
Number of non-gaseous mines in operation,	8
Number of tons of coal shipped to market,	3,370,078
Number of tons used at mines for steam and heat,	347,969
Number of tons sold to local trade and used by employes,	38,579
Number of tons produced,	3,756,626
Number of tons produced by compressed air machines,	.....
Number of tons produced by electrical machines,	118,591
Number of persons employed inside of mines,	6,485
Number of persons employed outside,	1,882
Number of persons employed inside between 16 and 21 years,	416
Number of persons employed outside between 14 and 21 years,	52
Number of fatal accidents inside,	28
Number of fatal accidents outside,	1
Number of non-fatal accidents inside,	35
Number of non-fatal accidents outside,	7
Number of tons of coal produced per fatal accident inside,	134,165
Number of tons produced per fatal accident inside and outside,	129,538
Number of persons employed per fatal accident inside,	232
Number of persons employed per fatal accident outside,	1,882
Number of persons employed per fatal accident inside and outside,	288
Number of persons employed per non-fatal accident inside,	185
Number of persons employed per non-fatal accident outside,	269
Number of persons employed per non-fatal accident inside and outside,	199
Number of wives made widows,	20
Number of children made orphans,	52
Number of steam locomotives inside,	.....
Number of steam locomotives outside,	22
Number of compressed air locomotives inside,	4
Number of compressed air locomotives outside,	.....
Number of electric motors inside,	115
Number of electric motors outside,	1
Number of gasoline locomotives inside,	.....
Number of gasoline locomotives outside,	.....
Number of cylindrical boilers,	.....
Number of tubular boilers,	154
Number of steam engines of all classes,	274

Number of internal combustion engines (gas),	.....
Number of electric dynamos,	16
Number of pumps of all classes,	191
Number of pumps delivering water to surface,	37
Number of air compressors,	13
Number of fans in use,	31
Number of new mines opened,	.....
Number of old mines abandoned,	.....

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Pennsylvania Coal Company,	2,921,691
Hillside Coal and Iron Company,	579,975
Lehigh Valley Coal Company,	248,301
McCauley Coal Company,	6,659
Total,	3,756,626

Production by Counties

Luzerne,	3,756,626

TABLE B.—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Total number of employes	Number of employes inside per fatal accident	Number of employes outside per fatal accident	Number of employes inside per non-fatal accident	Number of employes outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Pennsylvania Coal Co.,	23	-----	23	28	5	33	127,030	104,346	5,024	1,400	6,424	218	-----	179	280
Hillside Coal and Iron Co.,	2	1	3	4	-----	4	289,987	144,994	1,094	329	1,423	527	329	274	-----
Lehigh Valley Coal Co.,	3	-----	3	3	2	5	82,767	82,767	344	133	477	115	-----	115	67
Miscellaneous Companies,	-----	-----	-----	-----	-----	-----	-----	-----	23	20	43	-----	-----	-----	-----
Totals and averages,	28	1	29	35	7	42	134,165	107,332	6,485	1,882	8,367	232	1,882	185	269

TABLE C.—Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of roof,	2		2		1			1	2	1	2	2	13	46.43
Mine cars,		1	1							1			3	10.71
Explosions of gas,								2				2	4	14.29
Blasts, premature and otherwise,		1	1	1	2							1	6	21.43
Ice falling down shaft,		1											1	3.57
Bursting of air line,	1												1	3.57
Totals,	3	3	4	1	3			3	2	2	2	5	28	100.00
Outside														
Machinery,											1		1	100.00
Totals,											1		1	100.00
Grand totals,	3	3	4	1	3			3	2	2	3	5	29	

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of roof,	1		1		1		1	2		1	1	2	10	28.57
Mine cars,		2	1	1		1		1	3	1		3	13	37.14
Exposions of gas,		1						2	1				4	11.43
Blasts, premature and otherwise,				1	1	1	1						4	11.43
Mules,												1	1	2.86
Struck by a chain,											1		1	2.86
Struck by drill,										1			1	2.86
Struck by axe,			1										1	2.85
Totals,	1	3	3	2	2	2	2	5	4	3	2	6	35	100.00
Outside														
Cars,			1					1			1	1	4	57.14
Timber,											1		1	14.29
By falling,		2											2	28.57
Totals,		2	1					1			2	1	7	100.00
Grand totals,	1	5	4	2	2	2	2	6	4	3	4	7	42	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,	1	1	3	1	3			2	2		1	3	17
Miners' laborers,	2		1							1	1	1	6
Timbermen and rockmen,												1	1
Engineers,								1					1
Footmen,		1											1
Totals,	3	3	4	1	3			3	2	2	2	5	28
Outside													
Jig runners,											1		1
Totals,											1		1
Grand totals,	3	3	4	1	3			3	2	2	3	5	29

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Assistant mine foremen,		1											1
Miners,			3	2	2		2	2	1	2	2	3	19
Miners' laborers,		1				1		2		1		1	6
Drivers and runners,	1	1				1			2			1	6
Barn-bosses,												1	1
Engineers,								1	1				2
Totals,	1	3	3	2	2	2	2	5	4	3	2	6	35
Outside													
Slatepickers (boys),		1											1
Loaders,												1	1
Laborers,			1					1			2		4
Platemen,		1											1
Totals,		2	1					1			2	1	7
Grand totals,	1	5	4	2	2	2	2	6	4	3	4	7	42

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,		1						1		1		1	4
English,	1											1	2
Scotch,									1				1
Irish,			1										1
Polish,		1			1							1	3
Italian,	2	1	1	1	1					1	2	1	10
Lithuanian,			1		1			2					4
Austrian,												1	1
Russian,			1						1		1		3
Totals,	3	3	4	1	3			3	2	2	3	5	29

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	1	4						4	2			2	13
English,												1	1
Scotch,							1						1
Irish,										1			1
Polish,		1			1	1	1					1	5
Italian,			1	2				1		1	3	2	10
Salvonian,						1							1
Lithuanian,			1					1	2			1	5
Austrian,											1		1
Russian,			1		1					1			3
Canadian,			1										1
Totals,	1	5	4	2	2	2	2	6	4	3	4	7	42

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and types of safety lamps used	
				Shaft	Slope (coal or rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Pennsylvania Coal Co.										
Number 14 Colliery:										
Number 14,	Luzerne,	Checker or F,	66					Gaseous,		
Number 14,		Pittston or E,	108	571				Gaseous,		
Number 14,		Marcy or D,	72					Gaseous,		
Number 14,		Diamond or G,	60		1,850	6.5		Gaseous,		
Number 14,		Checker or F,	96				Drift,	Gaseous,		
Number 14,		Pittston or E,	120				Drift,	Gaseous,		
Number 14,		Marcy or D,	60				Drift,	Gaseous,		
Cortright,		Hillman or H,	86		2,140	7.5		Gaseous,		
Cortright,		Diamond or G,	74							
Ewen Colliery:										
Hoyt,		Checker or F,	84					Gaseous,		
Hoyt,		Pittston or E,	144					Gaseous,		
Hoyt,		Marcy or D,	60					Gaseous,		
Hoyt,		Red Ash or B,	72	531				Gaseous,		
Number 7,	Luzerne,	Checker or F,	60					Gaseous,		
Number 7,		Pittston or E,	141	311				Gaseous,		
Number 4,		Pittston or E,	139							
Number 4,		Marcy or D,	48					Gaseous,		
Number 4,		Clark or C,	42							
Number 4,		Red Ash or B,	72	462						

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and types of safety lamps used	
				Shaft	Slope (coal or rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Pennsylvania Coal Co.										
Number 6 Colliery:										
Number 5,	Luzerne,	Checker or F,	69					Gaseous,		
Number 5,		Pittston or E,	143					Gaseous,		
Number 5,		Marcy or D,	48	292				Gaseous,		
Number 6,		Marcy or D,	84					Gaseous,		
Number 6,		Clark or C,	41					Gaseous,		
Number 6,		Top Red Ash or B,	51					Gaseous,		
Number 6,		Red Ash or B,	60	558				Gaseous,		
Number 11,		Pittston or E,	143					Non-gas.,		
Number 11,		Marcy or D,	72					Gaseous,		
Number 11,		Red Ash or B,	63	440				Gaseous,		
Wright,		Hillman or H,	93					Non-gas.,		
Wright,		Diamond or G,	56		1,979	7.5		Gaseous,		
Number 9 Colliery:										
Number 1,	Luzerne,	Checker or F,	84					Non-gas.,		
Number 1,		Pittston or E,	126					Gaseous,		
Number 1,		Marcy or D,	84					Gaseous,		
Number 1,		Clark or C,	38					Gaseous,		
Number 1,		Top Red Ash or B,	42					Gaseous,		
Number 1,		Bottom Red Ash or B,	84	430				Gaseous,		
Leadville,		Checker or F,	90					Non-gas.,		
Leadville,		Clark or C,	42					Gaseous,		
Leadville,		Top Red Ash or B,	48					Gaseous,		
Leadville,		Bottom Red Ash or B,	72	452				Gaseous,		
Number 10,		Checker or F,	84					Non-gas.,		
Number 10,		Pittston or E,	128					Non-gas.,		

Number 10,		Marcy or D,	78	201				Gaseous,		
Number 10,		Clark or C,	48					Gaseous,		
Curtis,		Checker or F,	90					Non-gas.,		
Curtis,		Pittston or E,	108		750	15		Non-gas.,		
Barnum Colliery:										
Barnum,		Checker or F,	84					Gaseous,		
Barnum,		Pittston or E,	120					Gaseous,		
Barnum,	Luzerne,	Marcy or D,	96					Gaseous,		
Barnum,		Clark or C,	48					Gaseous,		
Barnum,		Red Ash or B,	51	518				Gaseous,		
Hillside Coal and Iron Co.										
Butler Colliery:										
Butler,		Pittston or E,	120					Non-gas.,		
Butler,		Marcy or D,	54		3,900	5		Non-gas.,		
Butler,	Luzerne,	Red Ash or B,						Gaseous,		
Thomas,		Stark or C,	36					Non-gas.,		
Thomas,		Red Ash or B,	63	221				Gaseous,		
Fernwood,		Top Red Ash or B,	36					Non-gas.,		
Fernwood,		Bottom Red Ash or B,	60		2,400	6		Non-gas.,		
Lehigh Valley Coal Co.										
Heidelberg Colliery:										
Number 1,	Luzerne,	Red Ash or B,	72		1,600	6		Non-gas.,		
Number 1,	Luzerne,	Marcy or D,	96		1,300	6		Non-gas.,		
Number 1,	Luzerne,	Clark or C,	36			5	1,400	Non-gas.,		
Number 2,	Luzerne,	Red Ash or B, / Clark or C,	198	340				Gaseous,	12	
Number 2,	Luzerne,	Pittston or E,	144		300	40		Non-gas.,		
Number 2,	Luzerne,	Clark or C,	48			Level	200	Non-gas.,		
McCauley Coal Co.										
Pickaway Colliery:										
Pickaway,	Luzerne,	Red Ash or B,	30 / 72				Drift,	Non-gas.,		

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangway	Number of splits of air currents	Number of persons employed inside
Pennsylvania Coal Co.												
Number 14 Colliery:												
Number 14, ----------	Luzerne, ----------	Checker or F, ----------	Guibal, ----------	20	70	1.2	Steam, ----------	92,787	78,085	111,975	6	253
Number 14, ----------		Pittston or E, ----------	Guibal, ----------	20	75	1.5	Steam, ----------	124,603	69,688	135,102	4	190
Number 14, ----------		Marcy or D, ----------	Guibal, ----------	20	68	1.5	Steam, ----------	63,816	51,031	70,704	5	138
Number 14, ----------		Diamond or G, ----------										
Number 14, ----------		Checker or F, ----------	Guibal, ----------	17	70	.8	Steam, ----------	87,354	75,743	97,522	8	224
Number 14, ----------		Pittston or E, ----------										
Number 14, ----------		Marcy or D, ----------										
Number 14, ----------		Hillman or H, ----------	Guibal, ----------	20	64	.9	Steam, ----------)	166,299	135,755	135,285	6	186
Cortright, ----------		Diamond or G, ----------	Guibal, ----------	20	54	.5	Steam, ----------)					
Cortright, ----------												
Ewen Colliery:												
Hoyt, ----------	Luzerne, ----------	Checker or F, ----------	Guibal, ----------	14	100	1.7	Steam, ----------	96,886	93,516	99,176	7	165
Hoyt, ----------		Pittston or E, ----------										
Hoyt, ----------		Marcy or D, ----------										
Hoyt, ----------		Red Ash or B, ----------	Guibal, ----------	14	98	1.6	Steam, ----------	94,237	91,669	96,182	5	214
Number 7, ----------		Checker or F, ----------	Guibal, ----------	20	60	.8	Steam, ----------	82,774	76,710	87,063	6	170
Number 7, ----------		Pittston or E, ----------										
Number 4, ----------		Pittston or E, ----------										
Number 4, ----------		Marcy or D, ----------										
Number 4, ----------		Clark or C, ----------	Guibal, ----------	20	60	1.5	Steam, ----------	63,490	55,160	70,240	6	194
Number 4, ----------		Red Ash or B, ----------										

Pennsylvania Coal Co.												
Number 6 Colliery:												
Number 5,	Luzerne,	Checker or F,	Guibal,	20	60	1.1	Steam,	123,585	122,880	124,297	9	333
Number 5,		Pittston or E,										
Number 5,		Marcy or D,										
Number 6,		Marcy or D,										
Number 6,		Clark or C,	Guibal,	20	68	1.0	Steam,	101,770	86,790	113,440	8	328
Number 6,		Top Red Ash or B,										
Number 6,		Red Ash or B,										
Number 11,		Pittston or E,										
Number 11,		Marcy or D,	Guibal,	20	64	1.	Steam,	61,470	65,390	69,500	6	176
Number 11,		Red Ash or B,										
Wright,		Hillman or H,	Guibal,	20	66	.6	Steam,	37,966	35,960	40,640	3	128
Wrignt,		Diamond or G,										
Number 9 Colliery:												
Number 1,		Checker or F,					Natural,	41,440	41,440	41,440	5	113
Number 1,		Pittston or E,										
Number 1,		Marcy or D,	Guibal,	20	60	1.	Steam,	55,020	47,580	68,870	4	125
Number 1,		Clark or C,										
Number 1,		Top Red Ash or B,	Guibal,	20	70	1.2	Steam,	96,160	78,970	100,000	5	214
Number 1,		Bottom Red Ash or B,										
Leadville,		Checker or F,										
Leadville,	Luzerne,	Clark or C,	2 fans									
Leadville,		Top Red Ash or B,	Guibal,	20	65	1.	Steam,	171,180	135,580	203,180	9	291
Leadville,		Bottom Red Ash or B,										
Number 10,		Checker or F,										
Number 10,		Pittston or E,	Guibal,	20	62	1.	Steam,	100,800	76,400	123,100	7	214
Number 10,		Marcy or D,										
Number 10,		Clark or C,										
Curtis,		Checker or F,	Guibal,	10.17	72	.5	Electricity,	30,400	25,200	33,000	2	29
Curtis,		Pittston or E,										
Barnum Colliery:												
Barnum,		Checker or F,										
Barnum,		Pittston or E,										
Barnum,	Luzerne,	Marcy or D,	Guibal,	18	56	.6	Steam,	78,500	73,400	86,500	5	133
Barnum,		Clark or C,	Guibal,	20	60	.8	Steam,	90,600	83,000	98,600	5	162
Barnum,		Red Ash or B,										
Hillside Coal and Iron Co.												
Butler Colliery:												
Butler,		Pittston or E,	Guibal,	20	66	1.3	Steam,	58,600	5,100	66,000	5	106
Butler,		Marcy or D,										
Butler,	Luzerne,	Red Ash or B,	Guibal,	14	96	2.0	Steam,	165,200	148,700	181,300	6	137
Thomas,		Stark or C,	Guibal,	16	94	1	Electricity,	121,200	111,300	136,400	5	97
Thomas,		Red Ash or B,										
Fernwood,		Top Red Ash or B,	Guibal,	20	54	.8	Electricity,	40,100	35,100	41,000	3	113
Fernwood,		Bottom Red Ash or B,										

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangway	Number of splits of air currents	Number of persons employed inside
Lehigh Valley Coal Co.												
Heidelberg Colliery:												
Number 1,	Luzerne,	Red Ash or B,	Guibal,	10	144	.8	Steam,	53,416	55,656	50,603	2	134
Number 1,	Luzerne,	Marcy or D,	Guibal,	12.8	80	.6	Steam,	43,512	52,700	40,703	1	36
Number 1,	Luzerne,	Clark or C,	Guibal,	16	80	.6	Steam,	35,548	38,152	26,310	2	29
Number 2,	Luzerne,	Red Ash or B,	Guibal,	20	60	.4	Steam,	52,600	53,800	34,200	3	85
		Clark or C,						11,800	12,100	10,300	1	27
Number 2,	Luzerne,	Pittston or E,						16,700	17,000	11,000	1	33
Number 2,	Luzerne,	Clark or C,										
McCauley Coal Co.												
Pickaway Colliery:												
Pickaway,	Luzerne,	Red Ash or B,					Natural,	5,690	7,610	4,600	1	23

TABLE J.—Operators and mines, name of coal bed, kind of openings, mining machines used and approximate number of tons produced by machines

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of opening	Gaseous or non-gaseous	Mining Machines		Approximate number of tons produced by machines
						Electric	Compressed air	
Pennsylvania Coal Co.								
Number 14,	Luzerne,	Marcy or D,	51	Drift,	Gaseous,	1		685
Number 6,		Clark or C,	56	Shaft,	Gaseous,	4		22,749
Number 9,		Red Ash or B,	77	Shaft,	Gaseous,	2		15,513
Barnum,		Clark or C,	53	Shaft,	Gaseous,	2		16,611
Totals,						9		55,558
Hillside Coal and Iron Co.								
Butler,	Luzerne,	Stark or C,	67	Shaft,	Non-gas.,	5		42,435
		Red Ash or B,	54	Shaft,	Gaseous,	2		20,598
Totals,						7		63,033
Grand totals,						16		118,591

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	General Superintendent	Postoffice	Superintendent	Postoffice	Railroad to Mine
Pennsylvania Coal Co.						
Number 14,	Luzerne,	William P. Jennings,	Scranton,	Edgar Weichel,	Pittston,	Erie
Ewen,				Benjamin Milton,	Pittston,	
Number 6,				John Brown,	Pittston,	
Number 9,				David Garvin,	Pittston,	
Barnum,				David Garvin,	Pittston,	
Hillside Coal and Iron Co.						
Butler,	Luzerne,	William P. Jennings,	Scranton,	James C. Johnson,	Avoca,	Erie
Lehigh Valley Coal Co.						
Heidelberg,	Luzerne,	Thomas Thomas,	Wilkes-Barre,	W. D. Owens,	Pittston,	Lehigh Valley
McCauley Coal Co.						
Pickaway,	Luzerne,	W. H. McCauley,	Pittston,	John Carden,	Pittston,	Lehigh Valley

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives		
										Pounds of black powder used	Pounds of dynamite used	Pounds of permissible explosives used
Pennsylvania Coal Co.												
Number 14,	Luzerne,	697,080	48,083	4,895	750,058	295	1,591	5	11	751,225	21,825	31,606
Ewen,		511,586	48,107		559,693	293	1,350	4	9	603,025		15,973
Number 6,		503,039	51,617	12,507	567,163	287	1,517	11	8	714,950		61,477
Number 9,		700,598	107,011	7,093	814,702	302	1,474	3	5	635,350	24,000	20,500
Barnum,		199,233	28,065	2,777	230,075	260	492			117,750	4,239	8,599
Totals,		2,611,536	282,883	27,272	2,921,691		6,424	23	33	2,822,300	50,064	138,155
Hillside Coal and Iron Co.												
Butler,	Luzerne,	534,015	37,289	8,671	579,975	289	1,423	3	4	533,625	24,500	49,430
Lehigh Valley Coal Co.												
Heidelberg,	Luzerne,	218,243	27,422	2,636	248,301	224	477	3	5	171,625	23,600	
McCauley Coal Co.												
Pickaway,	Luzerne,	6,284	375		6,659	130	43			3,750	3,500	
Grand totals,		3,370,078	347,969	38,579	3,756,626		8,367	29	42	3,531,300	101,664	187,585

TABLE 2.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Names of Operators	County	Power Plant										Pumps			Haulage					Air Compressors	
		Boilers				Engines									Locomotives						
		Cylindrical		Tubular		Steam Engines (All Classes)		Internal Combustion Engines (Gas)		Electric Dynamos (All Classes)				Pumps Delivering Water to the Surface							
		Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total watts kilo-	Number	Total capacity in gallons per minute	Number	Approximate number of gallons per minute	Number of horses and mules	Gasoline	Steam	Air	Electric	Number	Total capacity cubic feet per minute
Pennsylvania Coal Co.,	Luzerne,			117	16,328	207	15,220			12	2,930	136	52,300	24	20,650	611		16	4	86	11	5,185
Hillside Coal and Iron Co.,				24	3,460	38	3,300			4	990	32	83,090	4	1,100	97		5		30	2	480
Lehigh Valley Coal Co.,				12	1,900	28	1,020					22	7,150	9	5,500	92		1				
McCauley Coal Co.,				1	89	1	75					1				7						
Totals,				154	21,768	274	19,615			16	3,920	191	142,540	37	27,250	807		22	4	116	13	5,665

TABLE 3.—Part 1.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside: Mine foremen	Assistant mine foremen	Fire bosses	Miners	Miner's laborers	Machine miners	Machine runners and scrapers	Drivers and runners	Motormen and assistants	Doorboys and helpers	Trackmen and bratticemen	Timbermen and rockmen	Pumpmen and pipemen	Electricians and helpers	All other employes	Total inside	Outside: Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Machinists and helpers	Trackmen and helpers	Slate pickers (boys)	Slate pickers (men)	Office employes	All other employes	Total outside	Grand total inside and outside
Pennsylvania Coal Co., Hillside Coal and Iron Co.,	Luzerne,	16	48	22	1,882	1,383	16	15	470	146	64	151	245	31	33	492	5,024	4	6	167	141	48	24	171	82	11	746	1,400	6,424
Lehigh Valley Coal Co.,		3	11	---	375	270	24	36	49	64	12	92	20	9	9	190	1,694	1	1	31	28	11	19	49	6	3	180	329	1,423
McCauley Coal Co.,		3	6	---	188	40	---	---	47	---	---	13	9	8	---	30	344	---	1	18	24	2	2	10	---	3	73	133	477
Totals,		1	1	---	16	1	---	---	3	---	---	1	---	---	---	---	28	1	1	1	3	1	---	6	3	---	4	20	43
		23	66	22	2,471	1,694	40	51	569	210	76	257	274	48	42	712	6,485	6	9	217	196	62	45	296	91	17	1,003	1,882	8,367

TABLE 3—Part 2.

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Total
Pennsylvania Coal Co.,	Luzerne,	25	23	25	25	25	25	23	24	22	24	23	23	287
Hillside Coal and Iron Co.,		24	24	27	24	26	26	25	26	17	25	23	22	289
Lehigh Valley Coal Co.,		21	17	16	12	18	18	19	22	17	21	21	22	224
McCauley Coal Co.,		20	20	23						7	20	20	20	130

TABLE 4.—Fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 8	Samuel Cutrichon,	Italian,	Laborer,	26	M.	1	2	Number 9,	Luzerne,	Killed by fall of roof in chamber.
22	Alphonzo Sperazzo,	Italian,	Laborer,	43	M.	1	4	Number 6,		Killed by fall of roof at face of chamber.
26	Arthur Memmory,	English,	Miner,	39	M.	1	1	Number 6,		Killed by bursting of air line on gangway.
Feb. 3	Marianna Isopi,	Italian,	Runner,	18	S.			Number 14,		Killed by cars on slope.
6	Michael McGuire,	American,	Footman,	24	S.			Number 6,		Killed by being struck by a piece of ice that fell down shaft.
26	Edward Novak,	Polish,	Miner,	25	S.			Number 14,		Killed by an explosion of blast at face of chamber.
Mar. 2	Anthony Doleda,	Russian,	Miner,	40	M.	1	6	Ewen,		Killed by fall of roof at face of chamber.
7	John Dondera,	Italian,	Miner,	40	S.			Number 14,		Killed by fall of roof on pillar work.
15	Adam Stankas,	Lithuanian,	Miner,	38	M.	1	5	Number 6,		Killed by an explosion of blast in chamber.
22	Harry Dempsey,	Irish,	Laborer,	56	S.			Number 6,		Killed by cars in chamber.
April 21	Joseph Frocle,	Italian,	Miner,	41	M.	1	1	Number 9,		Killed by an explosion of blast at face of chamber.
May 10	Sylvester Strankos,	Lithuanian,	Miner,	44	M.	1	2	Number 6,		Killed by an explosion of blast at face of chamber.
12	James Changood,	Italian,	Miner,	34	M.	1		Heidelberg,		Killed by fall of roof at face of chamber.
25	Peter Kozla,	Polish,	Miner,	29	M.	1	2	Ewen,		Killed by an explosion of blast in cross-heading.
Aug. 9	B. Thamerge,	Lithuanian,	Miner,	37	M.	1	3	Number 6,		Killed by an explosion of gas on gangway.
	Thomas Martine,	American,	Engineer,	32	S.					
10	Simon Buphiuski,	Lithuanian,	Miner,	43	M.	1	5	Number 6,		Killed by fall of roof in chamber.
Sept. 14	Thomas Faulds,	Scotch,	Miner,	63	M.	1		Butler,		Killed by fall of roof in chamber.
20	Adam Glowasky,	Russian,	Miner,	33	M.	1	4	Heidelberg,		Killed by fall of roof in chamber.
Oct. 5	Robert Ryan,	American,	Laborer,	22	S.			Number 9,		Killed by fall of roof in chamber.
16	John Infantenio,	Italian,	Driver,	18	S.			Number 6,		Killed by cars on gangway.
Nov. 13	Rocco Maccio,	Italian,	Jig runner,	24	M.	1	2	Butler,		Killed by machinery in breaker. Outside.
16	Harry Kozall,	Russian,	Miner,	27	M.	1	2	Ewen,		Fatally injured by fall of roof at pillar work.

TABLE 4.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Mine	County	Nature and Cause of Accident in Brief
18	Guissippe Bianco,	Italian,	Laborer,	48	M.	1	3	Butler,	Luzerne,	Killed by fall of roof at face of a new slope.
Dec. 8	John Dougher,	American,	Rockman,	43	S.			Number 14,		Killed by an explosion of gas in chamber.
	Marcello Baise,	Italian,	Miner,	32	M.	1	1			
13	John Lacomg,	Austrian,	Miner,	41	M.	1	7	Heidelberg,		Killed by fall of roof at face of chamber.
20	James Turner,	English,	Laborer,	32	M.	1	2	Ewen,		Killed by fall of roof in chamber.
30	Anthony Smith,	Polish,	Miner,	50	M.	1		Number 6,		Killed by an explosion of blast in chamber.

TABLE 5.—Non-Fatal Accidents Inside and Outside of Mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 18	Charles Simon,	American,	Runner,	22	S.	Number 9,		Arm cut off by fall of roof in chamber.
Feb. 2	John Burke,	American,	Assistant foreman,	37	M.	Number 6,		Face burned by an explosion of gas on gangway.
5	John Burns,	American,	Runner,	28	S.	Ewen,		Leg fractured by cars on slope.
7	Stanley Cuba,	Polish,	Slatepicker,	16	S.	Number 14,		Shoulder fractured by falling. Outside.
24	John Koval,	American,	Plateman,	17	S.	Heidelberg,		Ankle sprained by falling. Outside.
28	Martin Gorman,	American,	Laborer,	28	S.	Number 6,		Ankle fractured by cars on gangway.
Mar. 7	John Roots,	Italian,	Laborer,	18	S.	Heidelberg,		Jaw fractured by cars. Outside.
	Joseph Ruskas,	Lithuanian,	Miner,	45	M.	Number 14,		Lung punctured by car in chamber.
8	John Cavanaugh,	Canadian,	Miner,	44	M.	Number 9,		Leg fractured by fall of roof at face of chamber.
14	John Yadsk,	Russian,	Miner,	27	M.	Heidelberg,		Finger lacerated by axe in chamber.
April 10	Charles Bilata,	Italian,	Miner,	30	M.	Number 6,		Leg fractured by car in chamber.
15	Lemp Veto,	Italian,	Miner,	25	S.	Butler,		Face lacerated by an explosion of blast in chamber.
May 15	Mike Franslauchas,	Polish,	Miner,	38	M.	Ewen,	Luzerne,	Back injured by an explosion of blast in chamber.
	Frank Dumbrosky,	Russian,	Miner,	28	M.	Heidelberg,		Foot injured by fall of roof in chamber.
June 19	Michael Kufta,	Slavonian,	Driver,	17	S.	Number 14,		Wrist sprained by cars on gangway.
23	Ignotz Bernoskie,	Polish,	Laborer,	40	M.	Number 14,		Leg fractured by an explosion of blast in chamber.
July 7	Joseph Pawlica,	Polish,	Miner,	38	M.	Ewen,		Head and chest lacerated by an explosion of blast in chamber.
21	Alex Mullen,	Scotch,	Miner,	45	M.	Number 6,		Spine fractured by fall of roof at face of chamber.
Aug. 3	Charles James,	American,	Miner,	44	S.	Number 14,		Ribs fractured by fall of roof at face of chamber.
	James McHale,	American,	Miner,	46	M.	Number 14,		Arm fractured by fall of roof in chamber.
7	Tony Keeler,	Italian,	Laborer,	22	S.	Number 14,		Foot fractured by cars. Outside.
9	William Lynch,	American,	Laborer,	25	M.	Number 6,		Skull and leg fractured by an explosion of gas in chamber.
	S. Cumiski,	Lithuanian,	Laborer,	25	M.			
26	Edward Bonasky,	American,	Engineer,	19	S.	Butler,		Leg fractured by cars on gangway.
Sept. 21	John Sudden,	American,	Driver,	18	S.	Number 14,		Collar bone fractured by cars on gangway.

TABLE 5—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
25	Samuel Kizie,	Lithuanian,	Runner,	25	M.	Ewen,		Ankle fractured by cars in chamber.
29	William Anderson,	American,	Engineer,	31	S.	Butler,		Leg fractured by cars in chamber.
	Joseph Kazacavage,	Lithuanian,	Miner,	41	M.	Number 6,		Neck and back burned by an explosion of gas in old chamber.
Oct. 4	Andrew Veitchak,	Russian,	Miner,	48	M.	Number 14,		Rib fractured. Struck by a drill in chamber.
13	Bat Corcoran,	Irish,	Miner,	55	M.	Ewen,		Arm fractured by fall of roof in chamber.
17	Tony Sandor,	Italian,	Laborer,	33	M.	Number 9,		Knee cap fractured by cars on gangway.
Nov. 11	Patrick Mosina,	Italian,	Miner,	29	S.	Number 6,		Leg fractured by fall of roof at face of chamber.
15	Charles Maffa,	Italian,	Laborer,	45	M.	Heidelberg,		Ankle fractured by timber rolling on him. Outside.
22	Mike Kosick,	Austrian,	Miner,	46	M.	Number 14,	Luzerne,	Ankle fractured by timber rolling on him. gangway.
	Michael Cueney,	Italian,	Laborer,	56	M.	Ewen,		Leg fractured by cars. Outside.
Dec. 6	Harry Fuller,	American,	Barnboss,	32	M.	Number 14,		Foot fractured by cars in barn.
	Leo Kowlyski,	Polish,	Miner,	32	M.	Ewen,		Leg fractured by fall of roof in chamber.
11	Joseph Romanaskie,	Lithuanian,	Miner,	34	M.	Ewen,		Leg fractured by fall of roof at face of chamber.
20	John Bosa,	Italian,	Laborer,	39	M.	Butler,		Knees injured by cars on gangway.
21	Thomas Lynch,	American,	Runner,	42	S.	Number 9,		Leg fractured. Kicked by a mule that he was passing on gangway.
23	Tony Mange,	Italian,	Loader,	51	M.	Number 9,		Pelvis fractured by cars under breaker. Outside.
29	George May,	English,	Miner,	49	M.	Ewen,		Ruptured while pushing a car.

CONDITION OF COLLIERIES

PENNSYLVANIA COAL COMPANY

Number 14, Ewen, Number 6, Number 9 and Barnum Collieries.—Ventilation, drainage and condition as to safety, good.

HILLSIDE COAL AND IRON COMPANY

Butler Colliery.—Ventilation, drainage and condition as to safety, good.

LEHIGH VALLEY COAL COMPANY

Heidelberg Colliery.—Ventilation, drainage and condition as to safety, good.

McCAULEY COAL COMPANY

Pickaway Colliery.—Ventilation and drainage, fair. Condition as to safety, good.

IMPROVEMENTS

PENNSYLVANIA COAL COMPANY

Number 14 Colliery.—Completed a new slope to Hillman vein, 500 feet long, on a 25 per cent. grade; also a slope to Hillman vein near Red Ash shafts, 450 feet long, on a 25 per cent. grade. These slopes are steam hoist and electric fan. At Checker vein shaft completed five rock tunnels to Top Split Checker vein, each 100 feet long, also five air shafts to ventilate these tunnels, each 15 feet deep.

Outside: Installed two 200 KW. sub-stations at Courtright slope, and erected a brick office building.

Ewen Colliery.—Installed in a new brick building, size 32 by 32 by 16 feet, one AC 320 KW generator, one pair of engines, size 14 by 18 inches, for No. 7 shaft. Also installed one DC 200 KW generator to furnish current to No. 4 shaft, and a 2-stage 2,000-gallon centrifugal pump in the Pittston vein at Hoyt shaft.

Number 9 Colliery.—In No. 1 shaft, Marcy vein, two centrifugal motor driven pumps, 1,200 G. P. M., pumping from the Marcy vein to the surface, were installed to replace two steam pumps at this point.

Outside: At No. 3 shaft, installed two 200 KW generators and one shaft hoist driven by a 52 H. P. motor, to take the place of the old steam engine at this opening. A concrete, brick and steel ventilating fan house was erected, housing a motor-driven Jeffrey fan with a capacity of 175,000 C. F. M. operating at 140 R. P. M.

HILLSIDE COAL AND IRON COMPANY

Butler Colliery.—Built a new brick locomotive house at Thomas shaft, which will hold five locomotives. Built an addition to washhouse, making it twice its former size.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in the Y. M. C. A. Hall, Pittston, June 6 and 7. The Board of Examiners was composed of Robert Johnson, Mine Inspector, Pittston; H. J. McMillan, Superintendent, West Pittston; Michael J. Ford, Miner, Inkerman; and Frank J. Parker, Miner, Avoca.

The following passed a satisfactory examination and were granted certificates:

MINE FOREMEN

Benjamin Ridgeley, Thomas J. Berry, Charles J. Reilley, Richard M. Williams, Avoca; James A. Hennigan, Alexander A. Morton, James M. Graham, George L. Allen, Joseph C. Hines, Joseph P. Chynoweth, Owen J. Gavigan, Pittston; Samuel Bird, Plymouth; John J. Fahey, Michael F. Dougher, Allen Robertson, Inkerman; Hugh A. Gildea, David James, James Brannigan, Plains; Daniel James, Miners Mills.

ASSISTANT MINE FOREMEN

William Semmens, Michael Gillrain, John Mainwaring, John T. Langley, Avoca; Neil Mullarkey, Benjamin Deeble, Inkerman; Charles N. Brown, Anthony Malachesky, Thomas F. Reddington, Anthony Mullen, David E. Evans, James Williams, Samuel Anderson, William MacDermont, Enrico Mattucci, Pittston; David David, Miners Mills; John R. Pattison, Plainsville; Patrick Gillespie, Charles Aitken, Jr., Plains; Michael Ryder, Stanley Kervenski, Parsons; John Breckenridge, John Fulton, Luzerne; Isaac Jones, Plymouth.

NINTH DISTRICT

LACKAWANNA AND LUZERNE COUNTIES

February 20, 1917.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor to transmit herewith the annual report for the Ninth Anthracite District for the year ending December 31, 1916.

I assumed charge as Inspector of Mines, September 1, 1916, by direction of the Chief of the Department of Mines, to act until the court could fill the vacancy caused by the resignation of Mine Inspector S. J. Jennings. December 16, 1916, the court appointed Edwin C. Curtis Inspector of Mines.

Respectfully submitted,

H. McDONALD,
Inspector.

SUMMARY OF STATISTICS

Number of collieries,	13
Number of mines,	25
Number of mines in operation,	25
Number of gaseous mines in operation,	19
Number of non-gaseous mines in operation,	6
Number of tons of coal shipped to market,	2,492,045
Number of tons used at mines for steam and heat,	328,403
Number of tons sold to local trade and used by employes,	84,448
Number of tons produced,	2,904,896
Number of tons produced by compressed air machines,	.....
Number of tons produced by electrical machines,	90,563
Number of persons employed inside of mines,	4,540
Number of persons employed outside,	1,418
Number of persons employed inside between 16 and 21 years,	373
Number of persons employed outside between 14 and 21 years,	171
Number of fatal accidents inside,	22
Number of fatal accidents outside,	1
Number of non-fatal accidents inside,	57
Number of non-fatal accidents outside,	8
Number of tons of coal produced per fatal accident inside,	132,041
Number of tons produced per fatal accident inside and outside,	126,300
Number of persons employed per fatal accident inside,	206
Number of persons employed per fatal accident outside,	1,418
Number of persons employed per fatal accident inside and outside,	259
Number of persons employed per non-fatal accident inside,	79
Number of persons employed per non-fatal accident outside,	177
Number of persons employed per non-fatal accident inside and outside,	92
Number of wives made widows,	13
Number of children made orphans,	29
Number of steam locomotives inside,	.....
Number of steam locomotives outside,	13
Number of compressed air locomotives inside,	.....
Number of compressed air locomotives outside,	6
Number of electric locomotives inside,	36
Number of electric motors outside,	31
Number of gasoline locomotives inside,	.....
Number of gasoline locomotives outside,	.....
Number of cylindrical boilers,	.....
Number tubular boilers,	88
Number of steam engines of all classes,	256
Number of internal combustion engines (gas),	.....

Number of electric dynamos,	17
Number of pumps of all classes,	176
Number of pumps delivering water to surface,	46
Number of air compressors,	6
Number of fans in use,	29
Number of new mines opened,	.....
Number of old mines abandoned,	1

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Lehigh Valley Coal Company,	1,475,132
Forty Fort Coal Company,	484,295
Kingston Coal Company,	461,488
Mount Lookout Coal Company,	236,239
Delaware, Lackawanna and Western Railroad Company,	219,124
Healy Coal Company,	28,618
White Coal Company,	*
Total,	2,904,896

Production by Counties

Luzerne,	2,635,152
Lackawanna,	269,744
Total,	2,904,744

*Included with Lehigh Valley Coal Co.

TABLE B.—Fatal and non-fatal accidents inside and outside of mines; number of tons of coal produced per accident; number of persons employed; number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Total number of employes	Number of employes inside per fatal accident	Number of employes outside per fatal accident	Number of employes inside per non-fatal accident	Number of employes outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Lehigh Valley Coal Co.,	16	1	17	36	4	40	92,195	40,975	2,170	673	2,843	135	673	60	168
Forty Fort Coal Co.,	2	------	2	8	1	9	242,148	60,537	773	242	1,015	386	--------	97	242
Kingston Coal Co.,	2	------	2	8	2	10	230,744	57,686	697	232	929	349	--------	87	116
Mount Lookout Coal Co.,	1	------	1	2	------	2	236,239	118,119	351	124	475	351	--------	175	--------
Delaware, Lackawanna and Western Railroad Co.,	1	------	1	3	1	4	219,124	73,041	454	118	572	454	--------	151	118
Miscellaneous Companies,	------	------	------	------	------	------	------	------	95	29	124	--------	--------	--------	--------
Totals and averages,	22	1	23	57	8	65	132,041	50,963	4,540	1,418	5,958	206	1,418	79	177

TABLE C.—Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of roof,	1	1	2	1	1						1	1	8	36.36
Mine cars,										1			1	4.55
Explosions of gas,											1		1	4.55
Explosions of powder and dynamite,		1							1				2	9.09
Blasts, premature and otherwise,						1	2	2	1	1		1	8	36.36
Electricity,							1						1	4.55
Struck by piece of rock,										1			1	4.54
Totals,	1	2	2	1	1	1	3	2	2	3	2	2	22	100.00
Outside														
Mules,								1					1	100.00
Totals,								1					1	100.00
Grand totals,	1	2	2	1	1	1	3	3	2	3	2	2	23	

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,	1		1			2							4	7.02
Falls of roof,	5	2			3				1	1			12	21.05
Mine cars,	1	2	3	2		1	1			1	2	4	17	29.83
Explosions of gas,		2	2			1	1						6	10.53
Explosions of powder and dynamite,									1		1		2	3.51
Blasts, premature and otherwise,		2	1							1	1	1	6	10.53
Cage,							1				1		2	3.51
By falling,	1												1	1.75
Struck by axe,											1		1	1.75
Struck by pipe,						1							1	1.75
Struck by rock and coal,	1	1				1				1	1		5	8.37
Totals,	9	9	7	2	3	6	3		2	4	7	5	57	100.00
Outside														
Cars,						1					1	1	3	37.50
Machinery,												1	1	12.50
Mules,							1						1	12.50
Struck by lever,					1								1	12.50
By falling,			1									1	2	25.00
Totals,			1		1	1	1				1	3	8	100.00
Grand totals,	9	9	8	2	4	7	4		2	4	8	8	65	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,		1	1	1	1	1	2	2	2	2	2	2	17
Miners' laborers,	1		1				1						3
Drivers and runners,		1											1
Doorboys and helpers,										1			1
Totals,	1	2	2	1	1	1	3	2	2	3	2	2	23
Outside													
Drivers,								1					1
Totals,								1					1
Grand totals,	1	2	2	1	1	1	3	3	2	3	2	2	23

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Assistant mine foremen,					1								1
Miners,	4	6	4	1	2	3	2		2	3	5	2	34
Miners' laborers,	3	2	1			1					1	1	9
Drivers and runners,	2	1	2			1					1	2	9
Motormen and assistants,				1									1
Doorboys and helpers,										1			1
Trackmen and bratticemen,							1						1
Timbermen and rockmen,						1							1
Totals,	9	9	7	2	3	6	3		2	4	7	5	57
Outside													
Blacksmiths and carpenters,			1				1						2
Laborers,											1	2	3
Companymen,						1							1
Footmen,					1							1	2
Totals,			1		1	1	1				1	3	8
Grand totals,	9	9	8	2	4	7	4		2	4	8	8	65

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,		1						1		1			3
Irish,			1										1
Polish,				1	1	1		1		2			6
Hungarian,		1											1
Italian,	1						1						2
Slavonian,							1				1		2
Austrian,								1			1		2
Russian,			1				1		2			2	6
Totals,	1	2	2	1	1	1	3	3	2	3	2	2	23

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,				1			1				3	2	7
English,					1								1
Welsh,	1		1			1	1						4
Irish,			1										1
Polish,	3	2	1						2	3	4	2	17
Hungarian,					1	3							4
Italian,	1	1	3	1		1					1	1	9
Slavonian,		2											2
Lithuanian,	3	4	1		1	1	1			1		2	14
Austrian,	1				1	1						1	4
Russian,							1						1
Swedish,			1										1
Totals,	9	9	8	2	4	7	4		2	4	8	8	65

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and types of safety lamps used	
				Shaft	Slope (coal or rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Lehigh Valley Coal Co.										
William A. Colliery:										
William A.,	Lackawanna,	B or Top Red Ash,	36							
		B or Middle Red Ash	90	165				Non-gas.,		
		B or Bottom Red Ash	82							
Babylon,	Luzerne,	B or Middle Red Ash	84							
		B or Bottom Red Ash	36	268				Non-gas.,		
		C or Clark,	48							
Number 10,	Lackawanna,	D or Marcy,	72				400	Gaseous,	4	
		C or Clark,	60							
Austin,	Lackawanna,	B or Middle Red Ash	60				400	Non-gas.,		
Seneca Colliery:										
Twin,	Luzerne,	D or Marcy,	48	119				Gaseous,		
		C or Clark,	40	285				Gaseous,		
		B or Fifth,	45	394				Gaseous,		50
Pittston,	Luzerne,	B or Sixth,	54	433				Gaseous,	125	
		E or Pittston,	50	90				Gaseous,		

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and types of safety lamps used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Stevens Colliery:										
Stevens,	Luzerne,	D or Marcy,	42	148				Gaseous,	2	
		C or Clark,	30	188				Gaseous,		
Exeter Colliery:		B or Red Ash,	72	343				Gaseous,	2	
		D or Marcy,	48	376				Gaseous,	15	
Exeter,	Luzerne,	F or Checker,	78	188				Gaseous,	3	
		E or Pittston,	60	296				Gaseous,	2	
		B or Red Ash,	96					Gaseous,	10	
		B or Fifth,	72	576				Gaseous,	6	
		B or Babylon,	42					Gaseous,	15	
		C or Clark,	28					Gaseous,	5	
Westmoreland Colliery:		E or Pittston,	80				Drift,	Gaseous,	50	
Westmoreland,	Luzerne,	D or Marcy,	48						60	
		E or Baltimore,	48	287				Gaseous,	4	
Maltby Colliery:		E or Pittston,	78						20	
		D or Marcy,	50						80	
		D or Marcy No. 5,	50					Gaseous,	20	
		C or Bottom Ross,	31						10	
Maltby,	Luzerne,	F or Nine Foot,	48		100	10		Non-gas.,		
		E or Six Foot,	72							
		E or Baltimore,	42							
Forty Fort Coal Co. Forty Fort Colliery:										
		F or Four Foot,	48							
		E or Six Foot,	60							
Forty Fort,	Luzerne,	G or Top Eleven Foot	34	350				Gaseous,	14	

		D or Bottom Eleven Foot	36								
		C or Top Ross,	30								
		C or Bottom Ross,	36								
Kingston Coal Co.											
Kingston No. 4 Colliery:											
		G or Orchard,	48								
		F or Lance,	54								
		E or Cooper,	60								
Number 1,	Luzerne,	E or Bennett,	60	337				Gaseous,	60	50	90
		F or Checker,	48								
		G or Eleven Foot,	36								
		F or Checker,	48								
		D or Eleven Foot,	36								
Number 4,	Luzerne,	C or Ross,	30	613				Gaseous,	60	55	85
		C or Ross,	96								
		B or Red Ash,	120								
Harry E Colliery:											
		F or Four Foot,	48								
		E or Six Foot,	60								
Harry E.,	Luzerne,	D or Eleven Foot,	60	394				Gaseous,	25	10	
		C or Top Ross,	48								
		C or Bottom Ross,	48								
		B or Red Ash,	66								
Mount Lookout Coal Co.											
		E or Pittston,	90								
		D or Marcy,	36								
Mount Lookout,	Luzerne,	C or Top Ross,	39	534				Gaseous,	119		
		C or Bottom Ross,	36								
		B or Red Ash,	57								
Delaware, Lackawanna and Western Railroad Co.											
Pettebone Colliery:		J or Abbott,		1,125				Gaseous,	66		
Pettebone No. 1,		I or Kidney or Bowkley		1,145				Gaseous,	62		
Pettebone No. 2,	Luzerne,	H or Hillman,		1,080				Gaseous,	121		
Numbers 3 and 4,		F or Five Foot,							60		
		E or Cooper,									30
		E or Bennett,									
		D or Skidmore,									
		C or Ross,									
		B or Red Ash,									
Healy Coal Co.											
Troy Colliery:											
Healy,	Luzerne,	D or Marcy,	66								
		C or Clark,	60					Drift,	Non-gas.,		
White Coal Co.		B or Green Veln,	30								
White Colliery,	Luzerne,	F or Checker,	84		75	18		Non-gas.,			

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Lehigh Valley Coal Co.												
William A. Colliery:												
William A.,	Lackawanna,	B or Top Red Ash, B or Middle Red Ash B or Bottom Red Ash	Guibal,	18	75	.7	Steam,	35,000	70,000	59,000		101
Babylon,	Luzerne,	B or Middle Red Ash										
Number 10,	Lackawanna,	B or Bottom Red Ash C or Clark,	Guibal,	20	80	1.	Steam,	58,650	76,000	51,900		202
		D or Marcy, C or Clark,	Buffalo,	8.5	200	1.2	Steam,	51,650	56,000	50,550		152
Austin,	Lackawanna,	B or Middle Red Ash	Guibal,	8	120	.3	Electricity,	17,500	17,600	1,400		34
Seneca Colliery:												
Twin,	Luzerne,	D or Marcy,	Guibal,	20	80	1.2	Steam,	72,000	79,000	20,000	2	65
		C or Clark,									3	168
Pittston,	Luzerne,	B or Fifth, B or Sixth,	Guibal,	24	74	2.4	Steam,	182,000	210,900	25,000	2	88
		E or Pittston,	Guibal,	20	60	.8	Steam,	32,000	40,000	25,600	1	26
Stevens Colliery:												
Stevens,	Luzerne,	D or Marcy, C or Clark,	Guibal,	20	70	.6	Steam,	64,100	64,800	46,200	3	77
		B or Red Ash,	Guibal,	20	65	.6	Steam,	69,800	70,500	51,500	3	61

Exeter Colliery:												
Exeter,	Luzerne,	D or Marcy, F or Checker,	Guibal,	20	70	.8	Steam,	133,450	117,233	143,087	4	112
		E or Pittston,	Guibal,	20	75	1.	Steam,	70,385	58,705	75,362	5	165
		B or Red Ash, B or Fifth,	Guibal,	20	76	1.	Steam,	106,029	54,552	103,354	4	101
Westmoreland Colliery:												
Westmoreland,	Luzerne,	B or Babylon, C or Clark,	Guibal,	20	76	1.8	Steam,	94,040	68,463	114,726	4	107
Maltby Colliery:												
		E or Pittston, D or Marcy,	Guibal,	20	80	1.8	Steam,	67,400 38,000	68,000 42,700	67,000 33,000	3 2	160 91
Maltby,	Luzerne,	E or Baltimore, E or Pittston, D or Marcy,	Guibal,	25	72	2.7	Steam,	30,000 25,500 48,000	33,000 30,200 51,000	21,000 20,900 39,000	2 2 3	30 75 180
		D or Marcy No. 5, C or Bottom Ross,	Guibal,	20	82	2.7	Steam,	23,000 20,000	31,000 28,000	16,000 14,600	1 1	63 58
		F or Nine Foot, E or Six Foot, E or Baltimore,	Guibal,	12	60	.5	Steam,	14,000 10,000 5,000	18,000 11,000 8,000	10,000 9,000 4,000	2 1	15 9 5
Forty Fort Coal Co.												
Forty Fort Colliery:												
Forty Fort,	Luzerne,	F or Four Foot, E or Six Foot, G or Top Eleven Foot	Guibal,	20	96	2.2	Steam,	165,900	193,800	142,100	10	
		D or Bottom Eleven Foot, C or Top Ross, C or Bottom Ross,	Guibal,	20	90	1.8						
Kingston Coal Co.												
Kingston No. 4 Colliery:												
Number 1,	Luzerne,	G or Orchard, F or Lance, E or Cooper,	Guibal,	25	75	2.5	Steam,	252,600	262,850	235,000	9	393
		E or Bennett, F or Checker, G or Eleven Foot,		25	80	2.5						
Number 4,	Luzerne,	F or Checker, D or Eleven Foot, C or Ross,	Guibal,	25	80	2.5	Steam,	169,800	199,750	143,600	6	304
Harry E Colliery:		C or Ross, B or Red Ash,										
Harry E.,	Luzerne,	F or Four Foot, E or Six Foot, D or Eleven Foot, C or Top Ross, C or Bottom Ross, B or Red Ash,	Guibal,	20	75	2.	Steam,	273,300	273,900	258,100	12	
			Guibal,	20	85	1.						

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Mount Lookout Coal Co.												
Mount Lookout,	Luzerne,	E or Pittston,										
		D or Marcy,	Guibal,	20	80	1.6	Steam,	174,700	200,600	153,200	15	
		C or Top Ross,	Guibal,	20	84	1.7	Steam,					
		C or Bottom Ross,										
		B or Red Ash,										
Delaware, Lackawanna and Western Railroad Co.												
Pettebone Colliery:												
		J or Abbott,										
		I or Kidney or Bowkley										
Pettebone No. 1,		H or Hillman,	Dickson,	35	52	2.3	Steam,	115,300	129,000	93,300	9	228
Pettebone No. 2,	Luzerne,	F or Five Foot,	Dickson,	22	60	2.5	Steam,					
Numbers 3 and 4,		E or Cooper,	Sturtevant,	16	76	1.3	Steam,	142,100	146,900	126,800	10	226
		E or Bennett,	Sturtevant,	16	*	*	Electricity,					
		D or Skidmore,										
		C or Ross,										
		B or Red Ash,										
Healy Coal Co.												
Troy Colliery:												
Healy,	Luzerne,	D or Marcy,					Natural,	14,000	14,400 / 9,800	4,200	2	61
		C or Clark,										
White Coal Co.		B or Green Vein,										
White Colliery,	Luzerne,											
		F or Checker,					Natural,					34

*Emergency fan.

TABLE J.—Operators and mines, name of coal bed, kind of openings, mining machines used and approximate number of tons produced by machines

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of opening	Gaseous or non-gaseous	Mining Machines		Approximate number of tons produced by machines
						Electric	Compressed air	
Lehigh Valley Coal Co.								
Maltby Colliery,	Luzerne,	C or Bottom Ross,	31	Shaft,	Gaseous,	1		4,993
Forty Fort Coal Co.								
Harry E.,	Luzerne,	D or Four Foot,	48	Tunnel,	Gaseous,	2		10,246
Mount Lookout Coal Co.								
Mount Lookout,	Luzerne,	E or Pittston,	90	Shaft,	Gaseous,	3		75,324
Totals,						6		90,563

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	General Superintendent	Post Office	Superintendent	Post Office	Railroad to Mine
Lehigh Valley Coal Co.						
William A,	Lackawanna,	Thomas Thomas,	Wilkes-Barre,	W. D. Owens,	Wilkes-Barre,	Lehigh Valley
Seneca,	Luzerne,					
Stevens,	Luzerne,					
Exeter,	Luzerne,					
Westmoreland,	Luzerne,					
Maltby,	Luzerne,					
Kingston Coal Co.						
Kingston No. 4,	Luzerne,	F. E. Zerbey,	Kingston,	Thos. H. Williams,	Edwardsville,	D. and H., Penna., D. L and W., C. R. of N. J. and L. V.
Forty Fort Coal Co.						
Forty Fort,	Luzerne,	F. H. Hemelright,	Scranton,	James I. McCarty,	Luzerne,	Lehigh Valley
Harry E.,						
Mount Lookout Coal Co.						
Mount Lookout,	Luzerne,	F. H. Hemelright,	Scranton,	Seward Button,	Wyoming,	L. V., and D. L. and W.
Delaware, Lackawanna and Western Railroad Co.						
Pettebone,	Luzerne,	William W. Inglis,	Scranton,	George V. O'Haro,	Dorranceton,	D. L. and W.
Healy Coal Co.						
Troy,	Luzerne,	M. J. Healy,	Plains,	M. J. Healy,	Plains,	Lehigh Valley.
White Coal Co.						
White,	Luzerne,	E. J. White,	Pittston,			Lehigh Valley.

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives: Pounds of black powder used	Explosives: Pounds of dynamite used	Explosives: Pounds of permissible explosives used
Lehigh Valley Coal Co.												
William A.,	Lackawanna,	224,724	35,073	9,947	269,744	268	627	2	10	232,175	41,675	
Seneca,	Luzerne,	213,429	40,143	8,176	261,748	240	502	2	13	305,875	11,925	
Stevens,	Luzerne,	79,687	12,607	144	92,438	†	164	1	2	14,450	43,795	
Exeter,	Luzerne,	266,304	46,463	23,297	336,064	234	638	7	6	164,600	180,925	
Westmoreland,	Luzerne,	171,692	10,191	6,784	188,667	232	330		5	57,750	144,400	
Maltby,	Luzerne,	282,716	34,320	9,435	326,471	249	582	5	4	216,650	149,900	
Totals,		1,238,552	178,797	57,783	1,475,132		2,843	17	40	991,500	572,620	
Forty Fort Coal Co.												
Forty Fort,	Luzerne,	244,912	22,420	4,201	271,533	218	501	2	7	170,525	110,825	
Harry E,	Luzerne,	185,510	22,796	4,456	212,762	169	514		2	171,175	70,725	
Totals,		430,422	45,216	8,657	484,295		1,015	2	9	341,700	181,550	
Kingston Coal Co.												
Kingston No. 4,	Luzerne,	405,567	50,000	5,921	461,488	289	929	2	10	442,725	3,325	12,975
Mount Lookout Coal Co.												
Mount Lookout,	Luzerne,	203,464	29,012	3,763	236,239	223	475	1	2	166,725	107,900	
Delaware, Lackawanna and Western Railroad Co.												
Pettebone,	Luzerne,	189 615	22,630	6,879	219,124	279	572	1	4	192,150	4,172	38,325

†Coal prepared at William A.

TABLE 2—Pat I—Continued

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives		
										Pounds of black powder used	Pounds of dynamite used	Pounds of permissible explosives used
Healy Coal Co.												
Troy,	Luzerne,	24,425	2,748	1,445	28,618	274	87			4,375	26,875	
White Coal Co.												
White,	Luzerne,	*			*	289	37				6,875	
Grand totals,		2,492,045	328,403	84,448	2,904,896		5,958	23	65	2,139,175	903,317	51,300

*Coal prepared and shipped by Lehigh Valley Coal Co. from Seneca breaker.

TABLE 2.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Names of Collieries	County	Power Plant										Pumps				Haulage					Air Compressors	
		Boilers				Engines											Locomotives					
		Cylindrical		Tubular		Steam Engines (All Classes)		Internal Combustion Engines (Gas)		Electric Dynamos (All Classes)				Pumps Delivering Water to the Surface								
		Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total kilowatts	Number	Total capacity in gallons per minute	Number	Approximate number of gallons per minute	Number of horses and mules	Gasoline	Steam	Air	Electric	Number	Total capacity cubic feet per minute
Lehigh Valley Coal Co.,	Lackawanna, Luzerne,			33	11,158	124	8,323			10	1,415	88	34,064	24	19,524	468		8	6	22	2	850
Forty Fort Coal Co.,				14	3,600	41	3,590					45	19,000	8	4,200			2		1		
Kingston Coal Co.,				14	3,900	30	4,325			4	730	11	7,950	7	5,000	95		1		4	1	3,336
Mount Lookout Coal Co.,				10	2,600	29	2,100			3	300	28	13,500	3	2,900			1		9	3	2,280
Delaware, Lackawanna and Western Railroad Co.,	Luzerne,			15	2,058	29	9,167					2	1,534	2	515	77		1				
Healy Coal Co.,				2	150	3	130					2	60	2	60	7						
White Coal Co.,																3				1		
Totals,				88	23,466	256	27,635			17	2,445	176	76,108	46	32,199	650		13	6	37	6	6,466

TABLE 3.—Part 1.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside															Outside											Grand total inside and outside
		Mine foremen	Assistant mine foremen	Fire bosses	Miners	Miner's laborers	Machine miners	Machine runners and scrapers	Drivers and runners	Motormen and assistants	Doorboys and helpers	Trackmen and bratticemen	Timbermen and rockmen	Pumpmen and pipemen	Electricians and helpers	All other employes	Total inside	Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Machinists and helpers	Trackmen and helpers	Slate pickers (boys)	Slate pickers (men)	Office employes	All other employes	Total outside	
Lehigh Valley Coal Co.,	Lackawanna, Luzerne,	10	60	----	1,051	292	2	2	276	47	31	82	42	38	2	235	2,170	----	5	68	114	11	8	57	13	18	379	673	2,843
Forty Fort Coal Co.,		2	5	9	339	155	1	1	108	27	16	30	12	21	----	47	773	2	2	20	32	10	2	7	47	6	114	242	1,015
Kingston Coal Co.,		3	4	9	297	141	----	----	93	7	10	26	11	23	2	71	697	1	1	26	42	4	2	----	29	5	122	232	929
Mount Lookout Coal Co.,	Luzerne,	1	1	4	108	128	5	3	7	23	2	26	8	15	----	20	351	1	1	14	24	4	2	----	13	3	62	124	475
Delaware, Lackawanna and Western Railroad Co.,		2	8	----	170	139	----	----	30	----	9	14	19	2	1	60	454	1	1	8	15	----	3	7	----	3	80	118	572
Healy Coal Co.,		1	1	----	26	11	----	----	11	----	----	3	----	3	----	5	61	1	1	2	3	----	----	7	4	1	7	26	87
White and Co.,		1	----	----	14	14	----	----	4	----	----	1	----	----	----	----	34	----	----	----	1	----	----	----	----	----	2	3	37
Totals.		20	79	22	2,005	880	8	6	529	104	68	182	92	102	5	438	4,540	6	11	138	231	29	17	78	106	36	766	1,418	5,958

TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Totals
Lehigh Valley Coal Co.,	Lackawanna, Luzerne,	24	20	18	14	20	21	22	23	17	21	22	22	244
Forty Fort Coal Co.,	Luzerne,	18	18	20	9	16	18	16	18	17	16	15	13	194
Kingston Coal Co.,	Luzerne,	24	23	26	20	26	24	23	26	25	25	24	23	289
Mount Lookout Coal Co.,	Luzerne,	22	22	24	16	17	18	19	21	15	17	16	16	223
Delaware, Lackawanna and Western Railroad Co.,	Luzerne,	22	20	25	15	24	24	25	26	25	25	24	24	279
Healy Coal Co.,	Luzerne,	21	20	24	23	22	21	23	25	23	25	24	23	274
White Coal Co.,	Luzerne,	26	24	24	25	25	25	24	26	24	25	25	25	298

TABLE 4.—Fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 7	Norma Comera,	Italian,	Laborer,	27	S.			William A,	Lackawanna,	Fatally injured by fall of roof on gangway.
Feb. 1	George Hollup,	Hungarian,	Miner,	64	M.	1		Exeter,		Fatally injured by an explosion of powder in cross-heading.
15	John Mills,	American,	Runner,	30	M.	1		Exeter,		Fatally injured by fall of roof on plane.
Mar. 1	Patrick Hannahan,	Irish,	Laborer,	42	S.			Pettebone,		Killed by fall of roof at face of airway.
6	Anthony Mulonis,	Russian,	Miner,	41	M.	1		Stevens,		Killed by fall of roof at face of chamber.
April 19	Frank Evanosky,	Polish,	Miner,	42	M.	1	4	Kingston No. 4,		Killed by fall of roof at face of airway.
May 29	Michael Golansky,	Polish,	Miner,	53	M.	1		Forty Fort,		Killed by fall of roof at face of chamber.
June 6	Jacob Ryscavage,	Polish,	Miner,	46	S.			Forty Fort,		Killed by an explosion of blast at face of chamber.
July 1	Constantani Coslalino.	Italian,	Miner,	22	S.			Seneca,	Luzerne,	Killed by an explosion of blast in chamber.
12	Simon Wolates,	Russian,	Miner,	42	M.	1	2	Seneca,		Killed by an explosion of blast in chamber.
15	John Lavitsky,	Slavonian,	Laborer,	20	S.			Maltby,		Electrocuted by coming in contact with trolley wire on gangway.
Aug. 8	Mike Zawada,	Austrian,	Miner,	44	M.	1	1	Exeter,		Killed by an explosion of blast at face of chamber.
24	John Walconis,	American,	Driver,	18	S.			William A,	Lackawanna,	Killed by being thrown from a mule. Outside.
30	Stanley Moskavage,	Polish,	Miner,	43	M.	1	4	Maltby,		Killed by an explosion of blast in chamber.
Sept. 2	Frank Koslowski,	Russian,	Miner,	45	S.			Exeter,		Killed by an explosion of blast in chamber.
14	Anthony Tomalavich,	Russian,	Miner,	33	S.			Exeter,		Killed by an explosion of powder on gangway.
Oct. 4	Joseph Grabliek,	Polish,	Miner,	42	M.	1	3	Mt. Lookout,		Killed by an explosion of blast in chamber.
7	Michael Backo,	Polish,	Miner,	43	M.	1	6	Maltby,	Luzerne,	Killed by rock sliding down chamber.
12	William Kedor,	American,	Doorboy,	16	S.			Maltby,		Killed by cars on slope.
Nov. 2	Michael Mezaeska,	Slavonian,	Miner,	41	M.	1	3	Kingston No. 4,		Killed by fall of roof in chamber.
10	Frank Koleskie,	Austrian,	Miner,	27	M.	1	2	Maltby,		Killed by an explosion of gas in abandoned chamber.
Dec. 13	Joseph Fakolosky,	Russian,	Miner,	44	S.			Exeter,		Killed by fall of roof at face of chamber.
29	Peter Malousky,	Russian,	Miner,	42	M.	1	4	Exeter,		Killed by an explosion of blast at face of chamber.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 3	John Prascavage,	Polish,	Miner,	24	M.	William A,	Lackawanna,	Toe injured. Struck by a piece of rock in chamber.
4	Anthony Bobonis,	Lithuanian,	Miner,	50	M.	Kingston No. 4,	Luzerne,	Leg fractured by fall of roof in chamber.
5	Joseph Budzeko,	Lithuanian,	Laborer,	27	S.	Kingston No. 4,	Luzerne,	Arm fractured by fall of coal in chamber.
6	Jake Sodiskitus,	Lithuanian,	Laborer,	31	S.	Seneca,	Luzerne,	Arm fractured by fall of roof in chamber.
10	Albert Lehigh,	Polish,	Miner,	50	M.	Westmoreland,	Luzerne,	Ankle fractured by falling on gangway.
11	George Monler,	Austrian,	Miner,	42	M.	Westmoreland,	Luzerne,	Leg fractured by fall of roof at face of chamber.
13	Vinago Cenvilli,	Italian,	Driver,	39	S.	Stevens,	Luzerne,	Arm fractured by fall of roof in chamber.
17	David Davis,	Welsh,	Driver,	41	S.	Pettebone,	Luzerne,	Seriously injured by cars on gangway.
22	John Myjlecky,	Polish,	Laborer,	23	M.	William A,	Lackawanna,	Ankle sprained by fall of roof in chamber.
Feb. 4	Frank Androlitus,	Polish,	Miner,	41	M.	William A,	Lackawanna,	Leg injured by fall of roof in chamber.
5	Dominick Dulsavage,	Polish,	Miner,	38	M.	William A,	Lackawanna,	Side wrenched by car on gangway.
7	Romanto Kayana,	Italian,	Miner,	40	M.	Westmoreland,	Luzerne,	Severely injured by an explosion of blast at face of chamber.
8	George Zawada,	Slavonian,	Miner,	45	M.	Exeter,	Luzerne,	Finger injured by an explosion of blast in chamber.
9	Anthony Roman,	Lithuanian,	Laborer,	23	S.	Kingston No. 4,	Luzerne,	Finger injured. Struck by a piece of coal in chamber.
12	Joseph Belans,	Lithuanian,	Miner,	40	M.	Seneca,	Luzerne,	Head and hands burned by an explosion of gas in chamber.
	Barney Koskoe,	Lithuanian,	Laborer,	46	S.	Seneca,	Luzerne,	Head and hands burned by an explosion of gas in chamber.
18	John Thomasie,	Slavonian,	Driver,	19	S.	Harry E,	Luzerne,	Arm fractured by cars on gangway.
24	Anthony Chesnovage,	Lithuanian,	Miner,	33	M.	Seneca,	Luzerne,	Back and chest injured by fall of roof at face of chamber.
Mar. 2	James Thomas,	Welsh,	Miner,	43	M.	Kingston No. 4,	Luzerne,	Knee injured by cars on gangway.
3	Andrew Rushefsky,	Polish,	Runner,	19	S.	Kingston No. 4,	Luzerne,	Leg injured by cars on gangway.
10	Peter Bernsky,	Lithuanian,	Driver,	22	S.	Kingston No. 4,	Luzerne,	Pelvis fractured by cars on gangway.
11	Lewis Wintoni,	Italian,	Miner,	23	M.	Seneca,	Luzerne,	Face and hands burned by an explosion of gas in chamber.
	Frank Seraphine,	Italian,	Miner,	31	M.	Seneca,	Luzerne,	Face and hands burned by an explosion of gas in chamber.
13	Barney Ganahan,	Irish,	Miner,	39	S.	Pettebone,	Luzerne,	Head and arm lacerated by an explosion of blast at face of chamber.

TABLE 5.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Mar. 18	Charles Taroli,	Italian,	Laborer,	36	M.	William A,	Lackawanna,	Shoulder dislocated by fall of coal at face of chamber.
29	Julius Carlson,	Swedish,	Blacksmith,	50	S.	Kingston No. 4,	Luzerne,	Arm fractured by falling. Outside.
April 21	Arthur Calvey,	American,	Motorman,	27	S.	Mt. Lookout,	Luzerne,	Arm fractured by cars on gangway.
25	Serafino Marikini,	Italian,	Miner,	27	S.	Stevens,	Luzerne,	Hand injured by cars on gangway.
May 12	George Danko,	Hungarian,	Miner,	42	M.	Exeter,	Luzerne,	Leg fractured by fall of roof at face of chamber.
15	Martin Winitkis,	Lithuanian,	Miner,	48	M.	Seneca,	Luzerne,	Leg fractured by fall of roof at face of chamber.
17	Thomas Gamble,	Austrian,	Footman,	35	S.	Westmoreland,	Luzerne,	Collar bone fractured. Struck by a lever. Outside.
18	William J. Weaver,	English,	Asst. foreman,	46	S.	Exeter,	Luzerne,	Collar bone fractured by fall of roof in chamber.
June 2	Dominick Roboskie,	Lithuanian,	Miner,	47	M.	Seneca,	Luzerne,	Face and hands burned by an explosion of gas in chamber.
3	Frank Musto,	Italian,	Miner,	52	M.	Exeter,	Luzerne,	Hip injured by fall of coal on pillar work.
6	Adam Onko,	Austrian,	Companyman,	40	M.	Maltby,	Luzerne,	Leg fractured by cars. Outside.
7	Adam Viscoski,	Polish,	Runner,	30	S.	Seneca,	Luzerne,	Wrist fractured by cars on gangway.
15	Stanley Marcinak,	Polish,	Laborer,	45	M.	Forty Fort,	Luzerne,	Leg injured. Struck by a piece of coal in chamber.
19	Jerry Cotter,	Welsh,	Timberman,	57	M.	Westmoreland,	Luzerne,	Hand lacerated by a pipe on gangway.
24	John Padgaruski,	Polish,	Miner,	36	M.	Kingston No. 4,	Luzerne,	Toe cut off by fall of coal at face of chamber.
July 5	John Walonis,	Lithuanian,	Miner,	40	M.	Harry E,	Luzerne,	Hands and face burned by an explosion of gas in abandoned chamber.
11	John Sennick,	Russian,	Miner,	62	M.	Exeter,	Luzerne,	Knee fractured by cage in chaft.
20	Fred Tompkins,	American,	Blacksmith,	35	M.	Maltby,	Luzerne,	Hip dislocated. Kicked by a mule. Outside.
21	John Humphries,	Welsh,	Trackman,	36	M.	Exeter,	Luzerne,	Skull fractured by cars in gangway.
Sept. 6	John Dombrowski,	Polish,	Miner,	45	M.	Seneca,	Luzerne,	Leg fractured by fall of roof in chamber.
19	Joseph Janawovitz,	Polish,	Miner,	26	S.	Mt. Lookout,	Luzerne,	Face and hands burned by an explosion of powder in chamber.
Oct. 9	Joseph Yucosky,	Polish,	Miner,	48	W.	William A,	Lackawanna,	Arm injured by fall of roof in chamber.
12	Michael Yanskoles,	Lithuanian,	Doorman,	50	M.	Forty Fort,	Luzerne,	Arm fractured by cars on gangway.

	28	Petro Sobeleski,	Polish,	Miner,	55	M.	Forty Fort,	Luzerne,	Seriously injured by an explosion of blast in chamber.
		John Zemerosky,	Polish,	Miner,	50	S.	Kingston No. 4,	Luzerne,	Eye injured by flying coal in chamber.
Nov.	6	William Litxhwink,	Polish,	Miner,	26	M.	Seneca,	Luzerne,	Arm and chest burned by an explosion of powder in chamber.
	7	John Lane,	American,	Miner,	44	M.	Seneca,	Luzerne,	Body bruised by cage in shaft.
		Cornwall Williams,	American,	Laborer,	18	S.	Pettebone,	Luzerne,	Severely injured by cars. Outside.
	14	Smotky Salvaton,	Italian,	Miner,	37	S.	William A,	Lackawanna,	Leg fractured by flying coal in chamber.
	16	Peter Guitson,	Polish,	Miner,	22	S.	William A,	Lackawanna,	Rib fractured by an explosion of blast in chamber.
	17	Frank Movorosky,	Polish,	Miner,	26	M.	William A,	Lackawanna,	Thumb lacerated. Struck by an axe.
	21	Ernest Mason,	American,	Driver,	18	S.	Pettebone,	Luzerne,	Thigh fractured by cars on gangway.
	24	Dosmnie Sparlow,	Polish,	Laborer,	55	M.	Forty Fort,	Luzerne,	Body bruised by cars on gangway.
Dec.	6	Simon Kootch,	Italian,	Footman,	31	M.	Kingston No. 4,	Luzerne,	Finger cut off in conveyor line. Outside.
	7	Joseph Melesky,	American,	Runner,	19	S.	William A,	Lackawanna,	Thumb crushed by cars on gangway.
		Fystock Zoyel,	Austrian,	Driver,	18	S.	Maltby,	Luzerne,	Shoulder dislocated by car on gangway.
		John Lavenick,	American,	Laborer,	21	S.	Maltby,	Luzerne,	Thumb injured by cars. Outside.
	13	John Newvik,	Lithuanian,	Laborer,	21	S.	Forty Fort,	Luzerne,	Ankle sprained by falling on breaker steps. Outside.
	15	William Sadlanski,	Lithuanian,	Miner,	25	S.	Seneca,	Luzerne,	Back bruised by cars on gangway.
	21	John Knopka,	Polish,	Miner,	29	M.	Forty Fort,	Luzerne,	Jaw injured by an explosion of blast in chamber.
	28	Stanley Kobus,	Polish,	Laborer,	37	M.	Forty Fort,	Luzerne,	Finger injured by cars in chamber.

CONDITION OF COLLIERIES

LEHIGH VALLEY COAL COMPANY

William A. Seneca, Stevens, Exeter, Westmoreland and Maltby Collieries.—Ventilation, drainage and condition as to safety, good.

FORTY FORT COAL COMPANY

Forty Fort and Harry E. Collieries.—Ventilation, drainage and condition as to safety, good.

KINGSTON COAL COMPANY

Kingston No. 4 Colliery.—Ventilation, drainage and conditions as to safety, good.

MOUNT LOOKOUT COAL COMPANY

Mount Lookout Colliery.—Ventilation, drainage and conditions as to safety, good.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Pettebone Colliery.—Ventilation, drainage and condition as to safety, good.

HEALY COAL COMPANY

Troy Colliery.—Ventilation, drainage and condition as to safety, good.

WHITE COAL COMPANY

White Colliery.—Ventilation, drainage and condition as to safety, good.

IMPROVEMENTS

FORTY FORT COAL COMPANY

Harry E. Colliery.—The main shaft wooden cribbing has been fitted with an interior steel cribbing, from a point six feet below the lip of the shaft for a distance of 51 feet five inches below that point. The steel crib measures 21 feet 2 inches by 10 feet 9 inches, and is built up of 12 inch by 20.5 inch steel channels, set with the web against the wood crib and bolted through the flanges with $\frac{3}{4}$ bolts, spaced 2 feet apart. The buntons are each composed of 26 inch by 15 inch steel ship channels riveted back with $\frac{1}{4}$ inch space between. This space accommodates a vertical wall plate of $\frac{1}{4}$ inch by 12 inch steel at each end of each bunton. The crib is stiffened longitudinally by $\frac{1}{4}$ inch by 7 inch steel plates between the flanges of the 12 inch channels at every third course; these plates project into a groove in wood crib and anchor and steel firmly against any downward slip.

All inequalities in the old wood crib behind the steel work have been filled with blue stone concrete, well rammed.

The air shaft shas been relined the upper 26 feet by placing a new interior crib of 10 by 12 hemlock in position inside the original crib, and filling all voids, by removing decayed wood in old crib, with concrete and cement. The new crib measures 10 by 24 feet.

New buntons have been placed for a distance of 76 feet from the mouth of the shaft. The airway brattice has been entirely renewed from the bottom at the Red Ash vein to the top. It is doubled boarded with white pine, with ends bricked up against the rock.

Completed a 7 by 12 foot rock plane on a 25 degree pitch, a distance of 90 feet from the bottom to the Top Ross vein, to improve the haulage; also a 7 by 12 foot tunnel from Bottom Ross to Top Ross on Road 22, to develop the Top Ross vein in that locality.

Installed a Pennsylvania rock crusher, size W-6, which is operated by an 18 by 36 inch steam engine.

Forty Fort Colliery.—Completed a 7 by 12 foot rock plane driven from Road 8-A, Chamber 1, in the Bottom Ross vein, to Road 9, in the Top Ross vein, to further develop the Top Ross vein in that locality and also to improve the transportation.

KINGSTON COAL COMPANY

Kingston No. 4 Colliery.—In No. 1 shaft, a new overcast has been built in Orchard vein for ventilation, and a short tunnel completed from Cooper to Lance vein.

In No. 4 shaft, a new overcast was built in the Red Ash vein for ventilation, and a tunnel driven from Checker to Bennett vein.

Installed a 10 by 16 inch air engine at the bottom of Ross vein.

Outside: A bore hole was drilled from surface to Orchard vein for electric wires, removing latter from inside traveling way.

A new playground for children of employes was built in Pringle Borough.

At No. 4 shaft, a 25 foot Guibal steel fan, uniflow steam valve movement, was installed, and a concrete fan house built for same.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Pettebone Colliery.—In No. 20 tunnel, Five Foot vein, an electric hoist, equipped with a 75 HP motor, was installed.

Outside: Installed a new electric sub-station equipment; two 27-ton steam locomotives to haul coal from Nos. 3 and 4 shafts to the breaker. Extended electric power lines from Woodward mine to Pettebone. Extended power line from Nos. 1 and 2 shafts to Nos. 3 and 4 shafts. Also installed one electrically driven, 16 foot Sturtevant ventilating fan at Nos. 3 and 4 shafts.

Completed annex to breaker, new wash-house and brick and concrete oil and supply house.

Two rock pulverizers have been installed at the plant.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foreman and assistant mine foreman was held in Pittston on June 5 and 6. The Board of Examiners was composed of Samuel

J. Jennings, Mine Inspector, Pittston; James J. McCarty, Superintendent, Luzerne; Thomas Grogan, Miner, Luzerne, and John Evers, Miner, Luzerne.

The following applicants passed a satisfactory examination and were granted certificates:

MINE FOREMEN

Albert J. Coles, Thomas M. Ridgley, Wyoming; Thomas H. Langan, Stanley Martin, Kingston; Matthew J. Carlin, Isidor Kockriter, Luzerne; Thomas Handley, Edwardsville.

ASSISTANT MINE FOREMEN

George H. Waters, Isaac J. Reynolds, Thomas Evans, Forty Fort; Michael A. Lavin, Swoyersville; Samuel Courts, Edward Williams, Iorweith Jones, Morgan Rowlands, Edwardsville; Lawrence Barrett, Wyoming.

TENTH DISTRICT

LUZERNE COUNTY

Wilkes-Barre, Pa., February 21, 1917.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor to transmit herewith my report as Inspector of Mines for the Tenth Anthracite District for the year ending December 31, 1916.

Respectfully submitted,

JOHN B. CORGAN,
Inspector.

SUMMARY OF STATISTICS

Number of collieries,	14
Number of mines,	46
Number of mines in operation,	46
Number of gaseous mines in operation,	24
Number of non-gaseous mines in operation,	22
Number of tons of coal shipped to market,	2,279,141
Number of tons used at mines for steam and heat,	166,755
Number of tons sold to local trade and used by employes,	54,364
Number of tons produced,	2,500,260
Number of tons produced by compressed air machines,	.....
Number of tons produced by electrical machines,	6,443
Number of persons employed inside of mines,	4,536
Number of persons employed outside,	1,501
Number of persons employed inside between 16 and 21 years,	254
Number of persons employed outside between 14 and 21 years,	303
Number of fatal accidents inside,	21
Number of fatal accidents outside,	4
Number of non-fatal accidents inside,	45
Number of non-fatal accidents outside,	8
Number of tons of coal produced per fatal accident inside,	119,060
Number of tons produced per fatal accident inside and outside,	100,010
Number of persons employed per fatal accident inside,	216
Number of persons employed per fatal accident outside,	375
Number of persons employed per fatal accident inside and outside,	241
Number of persons employed per non-fatal accident inside,	101
Number of persons employed per non-fatal accident outside,	188
Number of persons employed per non-fatal accident inside and outside,	114
Number of wives made widows,	18
Number of children made orphans,	31
Number of steam locomotives inside,	.....
Number of steam locomotives outside,	10
Number of compressed air locomotives inside,	.....
Number of compressed air locomotives outside,	.....
Number of electric motors inside,	32
Number of electric motors outside,	.....
Number of gasoline locomotives inside,	.....
Number of gasoline locomotives outside,	.....
Number of cylindrical boilers,	5
Number of tubular boilers,	76
Number of steam engines of all classes,	312
Number of internal combustion engines (gas),	.....
Number of electric dynamos,	6

Number of pumps of all classes,	66
Number of pumps delivering water to surface,	28
Number of air compressors,	8
Number of fans in use,	24
Number of new mines opened,	.....
Number of old mines abandoned,	.....

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Delaware and Hudson Company, Inside, Hudson Coal Company, Outside,	1,257,949
Traders Coal Company,	235,633
Lehigh Valley Coal Company,	216,221
Haddock Mining Company,	194,225
Raub Coal Company,	147,555
East Boston Coal Company,	143,525
Wilkes-Barre Colliery Company,	133,298
John Conlon Coal Company,	85,947
Healey Coal Company,	52,740
Central Coal Company,	33,167
Total,	2,500,260

Production by Counties

Luzerne,	2,500,260

TABLE B.—Fatal and non-fatal accidents inside and outside of mines, number of tons of coal produced per accident, number of persons employed, number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Total number of employes	Number of employes inside per fatal accident	Number of employes outside per fatal accident	Number of employes inside per non-fatal accident	Number of employes outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Delaware and Hudson Co.,	9	4	13	15	3	18	130,772	83,863	2,371	867	3,238	263	217	158	289
Traders Coal Co.,	1		1	4	1	5	235,633	58,908	439	70	509	439		110	70
Lehigh Valley Coal Co.,	3		3	4		4	72,074	54,055	285	77	362	95		71	
Haddock Mining Co.,	2		2	5	1	6	97,112	38,845	326	114	440	163		65	114
Raub Coal Co.,				3		3		49,185	323	116	439			108	
East Boston Coal Co.,	3		3	5	2	7	47,842	28,705	288	153	441	96		58	76
Wilkes-Barre Colliery Co.,	1		1	5		5	133,208	26,660	215	49	264	215		43	
John Conlon Coal Co.,	1		1	2		2	85,947	42,973	100	14	114	100		50	
Central Coal Co.,	1		1	2	1	3	33,167	16,583	112	20	132	112		56	20
Miscellaneous Companies,									77	21	98				
Totals and averages,	21	4	25	45	8	53	119,069	55,561	4,536	1,501	6,037	216	375	101	188

TABLE C.—Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Fall of coal,									1				1	4.76
Falls of roof,	2		1	2						3			8	38.10
Mine cars,	1	2											3	14.29
Explosions of gas,				1									1	4.76
Blasts, premature and otherwise,			1	1		1				1			4	19.05
Electricity,						1	1						2	9.52
Struck by timber,				1									1	4.76
By falling,		1											1	4.76
Totals,	3	3	2	5		2	1		1	4			21	100.00
Outside														
Cars,		1									1		2	50.00
Machinery,												1	1	25.00
Electricity,							1						1	25.00
Totals,		1					1				1	1	4	100.00
Grand totals,	3	4	2	5		2	2		1	4	1	1	25	

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,		1					1	2				1	5	11.11
Falls of roof,				1			2			1	1	1	6	13.33
Mine cars,		1	1	1		2	2	1	1		1		10	22.22
Blasts, premature and otherwise,	3		2	1				1		1			8	17.78
Machinery,		1											1	2.22
Struck by rail,						1					1		2	4.45
Struck by spray,								1					1	2.22
Struck by piece of rock,					1								1	2.22
Struck by piece of steel,				1									1	2.22
Struck by block,				1		1							2	4.45
Struck by chain block				1									1	2.22
Struck by piece of coal,	1										1		2	4.45
Struck by timber,									1	1			2	4.45
By falling,		1									1		2	4.44
Lifting car,												1	1	2.22
Totals,	4	4	3	6	1	4	5	5	2	3	5	3	45	100.00
Outside														
Cars,	1				1								2	25.00
Falling off wagon,											1		1	12.50
Scalded by steam,			1										1	12.50
Struck by rail,												1	1	12.50
Struck by timber,											1		1	12.50
Struck by steel shaft,				1									1	12.50
Struck by lever,	1												1	12.50
Totals,	2		1	1	1						2	1	8	100.00
Grand totals,	6	4	4	7	2	4	5	5	2	3	7	4	53	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,	2		2	4		1				2			11
Miners' laborers,	1			1		1			1	2			6
Drivers and runners,		1											1
Trackmen and bratticemen,		1											1
Surveyors,		1											1
Siltmen,		1											1
Totals,	3	3	2	5		2	1		1	4			21
Outside													
Laborers,												1	1
Brakemen,											1		1
Electricians,							1						1
Loaders,		1											1
Totals,		1					1				1	1	4
Grand totals,	3	4	2	5		2	2		1	4	1	1	25

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Mine foremen,		1											1
Assistant mine foremen,											1		1
Miners,	3	1	2	1			2	2		3		3	17
Miners' laborers,	1	1		2	1	2	2	1	2		2		14
Drivers and runners,		1		1		2	1	1			1		7
Pumpmen,				1									1
Trackmen,											1		1
Brakemen,			1										1
Slopemen,				1									1
Siltmen,								1					1
Totals,	4	4	3	6	1	4	5	5	2	3	5	3	45
Outside													
Engineers and firemen,	1		1										2
Laborers,												1	1
Masons,											1		1
Drivers,					1								1
Teamsters,				1							1		1
Platform men,	1												1
Totals,	2		1	1	1						2	1	8
Grand totals,	6	4	4	7	2	4	5	5	2	3	7	4	53

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,		1		1			2				1	1	6
English,			1										1
Polish,	1	2		1					1	1			6
Italian,		1	1										2
Slavonian,	1												1
Lithuanian,				1						2			3
Austrian,				1						1			2
Russian,	1			1		2							4
Totals,	3	4	2	5		2	2		1	4	1	1	25

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	2	3		4		1	1	2	1		3	2	19
English,											1		1
Welsh,								1					1
Irish,	1		1							1			3
Polish,	3	1	2	1	1		1	1	1		2	2	15
Italian,				1		1	1						3
Slavonian,					1	1				1			3
Lithuanian,							1						1
Austrian,			1					1					2
Russian,							1			1	1		3
Horwat,				1		1							2
Totals,	6	4	4	7	2	4	5	5	2	3	7	4	53

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and types of safety lamps used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Delaware and Hudson Co.*										
Laflin Colliery:										
Laflin,	Luzerne,							Non-gas.,		
Laflin,								Non-gas.,		
Delaware Colliery:										
Delaware No. 1,	Luzerne,	Bennett,	82					Gaseous,		
Delaware No. 2,		Red Ash,	20					Gaseous,		
Waddells,								Gaseous,		
Pine Ridge Colliery:										
Pine Ridge,	Luzerne,							Gaseous,		
Laurel Run,								Gaseous,		
Baltimore No. 5 Colliery:										
Baltimore No. 2,	Luzerne,							Gaseous,		
Baltimore No. 3,								Gaseous,		
Baltimore No. 5,								Gaseous,		
Conyngham,		Hillman,						Gaseous,		
Conyngham,		Baltimore,						Gaseous,		

*Hudson Coal Co. Outside.

TABLE I—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and types of safety lamps used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Baltimore Tunnel Colliery:										
Baltimore No. 4,	Luzerne,						Tunnel,	Gaseous,		
Baltimore,							Tunnel,	Gaseous,		
Traders Coal Co.										
Ridgewood Colliery:										
Ridgewood,	Luzerne,	Ross,	96			18	3 drifts,	Non-gas.,		
Ridgewood,		Red Ash,	30		849			Non-gas.,		
Lehigh Valley Coal Co.										
Mineral Spring Colliery:										
Mineral Spring,	Luzerne,	Red Ash,	96	417				Gaseous,	40	
		Skidmore,	52							
		Checker,	60		1,550	14		Gaseous,	12	
		Baltimore,	78							
Number 34,		Red Ash,	96				Tunnel,	Non-gas.,		
Haddock Mining Co.										
Black Diamond Colliery:										
		Orchard,	54		208	25				
		Lance,	42		125	19				
		Cooper,	60	145						
Black Diamond,	Luzerne,	Bennett,	78	175				Gaseous,	20	
		Marcy,	54	260						
		Ross,	72	450						
		Red Ash,	84	525						

Raub Coal Co.										
Louise Colliery:										
Louise,	Luzerne,	Ross,	60			Tunnel,				
		Thomas,	48			Drift,				
		Red Ash,	48			Drift,				
		Klondyke Ross,	60			Drift,	Non-gas.,			
		Waddell Red Ash,	96	1,200	12					
		Waddell Ross,	120	1,800	12					
		Waddell Eleven Foot,	48	1,600	16					
		Waddell Bennett,	120			Drift,				
East Boston Coal Co.										
East Boston Colliery:										
East Boston,	Luzerne,	B Red Ash,	115							
		C Ross,	107							
		C Ross Top Split,	27							
		B Eleven Foot,	36	560			Gaseous,		15	8
		E Bennett,	123							
		E Cooper,	66							
		F Lance,	74							
		G Four Foot,	54							
Wilkes-Barre Colliery Co.										
Madeira Colliery:										
Madeira,	Luzerne,	Five Foot,	60			Drift,	Nong-gas,			
		Cooper,	132				Non-gas.,			
Madeira,	Luzerne,	Bennett,	132	300	27		Non-gas.,			
		Ross,	48				Gaseous,		24	12
		D,	36				Gaseous,			
Madeira,	Luzerne,	C	30	400	27		Gaseous,			
		B,	30				Gaseous,			
John Conlon Coal Co.										
Conlon Colliery:										
Conlon,	Luzerne,	Bennett,	108	1,550	10		Non gas.,		6	
		Cooper,	108							
Healey Coal Co.										
Miners Mills Colliery:										
Miners Mills,	Luzerne,	Five Foot,	60	525	15		Gaseous,		2	
Miners Mills,	Luzerne,	Stanton,	36				Non-gas.,			
		Baltimore,	72	310	18		Non-gas.,			
Central Coal Co.										
Wyoming Colliery:										
Wyoming,	Luzerne,	Bennett,	84			Drift,	Non-gas.,		2	
		Ross,	44	1,000	10		Non-gas,			
		Ross,	44	300	25		Non-gas.,			
		Top Red Ash,	48			Drift,	Non-gas.,			
		Bottom Red Ash,	48			Tunnel,	Non-gas.,			

TABLE I—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Delaware and Hudson Co.*												
Laflin Colliery:												
Laflin,	Luzerne,		Guibal,	20	75	1.7	Steam,	113,895	128,970	97,005	6	382
Laflin,			Guibal,	14	85	1.2	Steam,	55,989	64,029	49,640	3	
Delaware Colliery:												
Delaware No. 1,	Luzerne,	Bennett,	Guibal,	22.5	60	1.7	Steam,	181,257	217,738	141,766	9	523
Delaware No. 2,		Red Ash,	Jeffrey,	20	80	1.3	Steam,					
Waddells,			Guibal,	22.5	60	1.7	Steam,					
Pine Ridge Colliery:												
Pine Ridge,	Luzerne,		Guibal,	28	58	2.2	Steam,	258,700	273,700	151,400	10	739
Laurel Run,			Guibal,	28	56	2.1	Steam,	108,890	112,660	76,270	6	
Baltimore No. 5 Colliery.												
Baltimore No. 2,	Luzerne,		Guibal,	17.5	64	2.2	Steam,	126,385	141,975	109,895	4	468
Baltimore No. 3,			Guibal,	28	65	2.8	Steam,	192,605	297,130	168,050	5	
Baltimore No. 5,			Guibal,	28	65	2.8	Steam,					
Conyngham,		Hillman,	Guibal,	20	78	1.8	Steam,	85,770	80,930	80,640	3	
Conyngham,		Baltimore,	Guibal,	17	90	1.7	Steam,	102,920	125,960	91,350	4	
Baltimore Tunnel Colliery:												
Baltimore No. 4,	Luzerne,		Guibal,	18	52	1	Steam,	97,210	126,550	78,820	4	257
Baltimore,			Guibal,	8	75	.8	Steam,	21,290	23,120	18,430	3	

*Hudson Coal Co. outside.

Traders Coal Co.												
Ridgewood Colliery:												
Ridgewood,	Luzerne,	Ross,					Natural,					179
Ridgewood,		Red Ash,	Guibal,	16	75	.8	Steam,	66,500	70,000	25,650	4	257
Lehigh Valley Coal Co.												
Mineral Spring Colliery:												
Mineral Spring,	Luzerne,	Red Ash,	Guibal,	20	65	1.1	Steam,	103,500	110,000	85,000	7	208
		Skidmore,	Guibal,	12	100	.7	Steam,	27,500	29,000	17,000	2	49
Mineral Spring,		Checker,										
		Baltimore,					Natural,	23,000	24,000	13,350	1	28
Number 34,		Red Ash,					Natural,					
Haddock Mining Co.												
Black Diamond Colliery:												
		Orchard,										
		Lance,										
		Cooper,										
Black Diamond,	Luzerne,	Bennett,	Guibal,	20	90	1.9	Steam,	125,000	129,000	60,000	9	295
		Marcy,										
		Ross,										
		Red Ash,										
Raub Coal Co.												
Louise Colliery:												
		Ross,										
		Thomas,						16,400	15,100	17,200		49
		Red Ash,						15,100	14,600	15,700		54
		Klondyke Ross,						15,000	14,500	16,200		51
Louise,	Luzerne,	Waddell Red Ash,					Natural,	14,800	14,000	15,900		23
		Waddell Ross,						13,500	13,000	14,200		57
		Waddell Eleven Foot,						14,400	13,800	15,900		58
		Waddell Bennett,						14,300	13,900	15,000		26
								14,100	13,700	14,500		5
East Boston Coal Co.												
East Boston Colliery:												
		B Red Ash,										
		C Ross,										
		C Ross Top Split,										
East Boston,	Luzerne,	B Eleven Foot,										
		E Bennett,	Guibal,	25	65	1.5	Steam,	195,000	203,000	145,000	17	288
		E Cooper,										
		F Lance,										
		G Four Foot,										
Wilkes-Barre Colliery Co.												
Madeira Colliery:												
Madeira,	Luzerne,	Five Foot,										
		Cooper,										
Madeira,	Luzerne,	Bennett,										
		Ross,	Jeffrey,	12	64	.5	Electricity,	71,200	55,800	89,700	3	215
		D,										
Madeira,	Luzerne,	C										
		B,										

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
John Conlon Coal Co.												
Conlon Colliery:												
Conlon,	Luzerne,	Bennett,					Natural,	90,000	90,000	38,000		100
		Cooper,										
Healey Coal Co.												
Miners Mills Colliery:												
Miners Mills,	Luzerne,	Five Foot,	Guibal,	8	140	1	Electricity,	18,475	20,360	17,150	3	75
Miners Mills,	Luzerne,	Stanton,	Guibal,	16	75	1	Steam,	20,350	22,625	18,275		
		Baltimore,						25,760	27,140	22,875		
Central Coal Co.												
Wyoming Colliery:												
		Bennett,					Natural,					15
		Ross,	Stine,	6	600	1	Electricity,	50,000	52,000	15,000	3	60
Wyoming,	Luzerne,	Ross,					Natural,					25
		Top Red Ash,	American Blower.	6	99		Electricity,	16,000	20,000	7,000	2	10
		Bottom Red Ash,										

TABLE J.—Operators and mines, name of coal bed, kind of openings, mining machines used and approximate number of tons produced by machines

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of opening	Gaseous or non-gaseous	Mining Machines		Approximate number of tons produced by machines
						Electric	Compressed air	
Delaware and Hudson Co.*								
Laflin,	Luzerne,	Red Ash,		Shaft,	Non-gas.,	1		988
Pine Ridge,		Ross,		Shaft,	Gaseous,	1		1,064
Baltimore No. 5,		Checker,		Shaft,	Gaseous,	1		4,391
Totals,						3		6,443

*Hudson Coal Co. Outside.

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	General Superintendent	Post Office	Superintendent	Post Office	Railroad to Mine
Delaware & Hudson Co.* Laflin, Delaware, Pine Ridge, Baltimore No. 5, Baltimore Tunnel, Baltimore No. 5 Washery, Baltimore Tunnel Washery,	Luzerne,	Charles Dorrance, Jr.	Scranton,	J. B. T. Jones, S. V. Tench,	Wilkes-Barre,	Delaware and Hudson
Traders Coal Co. Ridgewood,	Luzerne,	W. L. Schlager,	Scranton,	John X. Conway,	Plains,	C. R. R. of N. J., and Erie
Lehigh Valley Coal Co. Mineral Spring,	Luzerne,	Thomas Thomas,	Wilkes-Barre,	John H. Haertter,	Wilkes-Barre,	Lehigh Valley
Haddock Mining Co. Black Diamond,	Luzerne,	Gilbert S. Jones,	Doranceton,			D. L. and W., and L. V.
Raub Coal Co. Louise,	Luzerne,	Gwillym Edwards,	Luzerne,	Gwillym Edwards,	Luzerne,	Lehigh Valley
East Boston Coal Co. East Boston, East Boston Washery,	Luzerne,	W. T. Payne,	Kingston,	Peter Henderson,	Luzerne,	Penna., L. V. and D. L. and W.
Wilkes-Barre Colliery Co. Madeira,	Luzerne,	W. G. Thomas,	Pottsville,	W. G. Thomas,	Parsons,	Delaware and Hudson
John Conlon Coal Co. Conlon,	Luzerne,			William Hilbert,	Plains,	Delaware and Hudson
Healey Coal Co. Miners Mills,	Luzerne,	Edward Jenkins,	Hudson,			Lehigh Valley
Central Coal Co. Wyoming,	Luzerne,	A. F. Wolf,	Hudson,	W. J. Startzell,	Hudson,	Delaware and Hudson

*Hudson Coal Co., outside.

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives: Pounds of black powder used	Explosives: Pounds of dynamite used	Explosives: Pounds of permissible explosives used
Delaware and Hudson Co.*												
Laflin,	Luzerne,	112,133	21,865	991	134,989	150	489	3	1	182,675	48,163	
Delaware,		269,996	9,693	7,962	287,561	272	726	1	2	311,200	25,563	
Pine Ridge,		329,431	1,730		322,161	241	986	5	6	405,325	21,126	
Baltimore No. 5,		468,399	28,535	8,613	505,547	274	746	4	8	288,125	15,288	
Baltimore Tunnel,		3,064	96	390	3,550	274	291		1			
		1,173,933	61,919	17,956	1,253,808		3,238	13	18	1,187,325	110,140	
Washeries												
Baltimore No. 5,	Luzerne,	3,439			3,439	274	†					
Baltimore Tunnel,			702		702	3	‡					
		3,439	702		4,141		3,238	13	18	1,187,325	110,140	
Totals,		1,177,372	62,621	17,956	1,257,949							
Traders Coal Co.												
Ridgewood,	Luzerne,	222,178	12,600	855	235,633	281	509	1	5	210,350	23,800	
Lehigh Valley Coal Co.												
Mineral Spring,	Luzerne,	180,505	26,780	8,936	216,221	177	362	3	4	106,950	70,015	
Haddock Mining Co.												
Black Diamond,	Luzerne,	143,067	45,750	5,408	194,225	236	440	2	6	84,375	33,900	

*Hudson Coal Co. Outside.
†Employes included with Baltimore No. 5 Colliery.
‡Employes included with Baltimore Tunnel Colliery.

TABLE 2.—Part 1.—Continued

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives: Pounds of black powder used	Explosives: Pounds of dynamite used	Explosives: Pounds of permissible explosives used
Raub Coal Co.												
Louise,	Luzerne,	132,265	7,300	7,990	147,555	268	439		3	72,750	16,125	39,600
East Boston Coal Co.												
East Boston,	Luzerne,	126,822		6,102	132,924	169	422	3	7	4,270	41,050	14,000
East Boston Washery,	Luzerne,	2,736	7,865		10,601	408	19					
Totals,		129,558	7,865	6,102	143,525		441	3	7	4,270	41,050	14,000
Wilkes-Barre Colliery Co.												
Madeira,	Luzerne,	127,656	2,089	3,553	133,298	290	264	1	5	5,900	5,050	1,375
John Conlon Coal Co.												
Conlon,	Luzerne,	84,747		1,200	85,947	301	114	1	2	30,300		1,100
Healey Coal Co.												
Miners Mills,	Luzerne,	49,783	1,095	1,862	52,740	254	98			60,000	4,000	
Central Coal Co.												
Wyoming,	Luzerne,	32,010	655	502	33,167	230	132	1	3	45,000	3,850	1,000
Grand totals,		2,279,141	166,755	54,364	2,500,260		6,037	25	53	1,807,220	307,930	57,075

TABLE 2.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Names of Operators	County	Power Plant: Boilers: Cylindrical: Number	Cylindrical: Total horse power	Tubular: Number	Tubular: Total horse power	Engines: Steam Engines (All Classes): Number	Steam Engines: Total horse power	Internal Combustion Engines (Gas): Number	Internal Combustion Engines: Total horse-power	Electric Dynamos (All Classes): Number	Electric Dynamos: Total watts kilo-	Pumps: Number	Total capacity in gallons per minute	Pumps Delivering Water to the Surface: Number	Approximate number of gallons per minute	Haulage: Number of horses and mules	Locomotives: Gasoline	Steam	Air	Electric	Air Compressors: Number	Total capacity cubic feet per minute
Delaware and Hudson Co.,*	Luzerne,	----	----	44	19,978	205	11,584	----	----	----	----	15	17,800	15	8,330	342	----	5	----	28	----	----
Traders Coal Co.,		----	----	2	800	5	500	----	----	----	----	2	3,000	1	2,000	51	----	----	----	----	----	----
Lehigh Valley Coal Co.,		----	----	4	1,000	19	2,295	----	----	----	----	9	6,520	1	1,320	65	----	1	----	----	----	----
Haddock Mining Co.,		3	1,100	12	1,500	46	3,300	----	----	----	----	23	2,880	3	2,800	65	----	1	----	1	3	4,300
Raub Coal Co.,		----	----	3	900	6	400	----	----	----	----	6	3,500	1	1,000	40	----	1	----	----	----	----
East Boston Coal Co.,		----	----	8	1,942	27	1,258	----	----	----	----	3	4,500	3	2,000	62	----	----	----	----	3	7,500
Wilkes-Barre Colliery Co.,		----	----	1	100	----	----	----	----	1	75	4	806	2	300	19	----	----	----	3	1	850
John Conlon Coal Co.,		1	250	----	----	----	----	----	----	----	----	----	----	----	----	11	----	----	----	----	----	----
Healey Coal Co.,		1	150	1	100	4	200	----	----	5	160	1	200	----	----	13	----	1	----	----	1	600
Central Coal Co.,		----	----	1	125	----	----	----	----	----	----	3	270	2	180	4	----	1	----	----	----	----
Totals,		5	1,500	76	17,445	312	19,537	----	----	6	235	66	39,390	28	17,930	672	----	10	----	32	8	13,250

*Hudson Coal Co. Outside.

TABLE 3.—Part 1.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside															Total inside	Outside											Total outside	Grand total inside and outside
		Mine foremen	Assistant mine foremen	Fire bosses	Miners	Miner's laborers	Machine runners and scrapers	Machine miners	Drivers and runners	Motormen and assistants	Doorboys and helpers	Trackmen and bratticemen	Timbermen and rockmen	Pumpmen and pipemen	Electricians and helpers	All other employes		Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Machinists and helpers	Trackmen and helpers	Slate pickers (boys)	Slate pickers (men)	Office employes	All other employes			
Delaware and Hudson Co.,*	Luzerne,	5	20	23	841	826	4		251	43	14	56	26	31	6	225	2,371		13	53	149	13	1	44	86	10	498	867	3,238
Traders Coal Co.,		1	2	6	164	164			56		9	14	4	2	1	16	439	1	1	7	12	1	2	12	2	3	29	70	509
Lehigh Valley Coal Co.,		1	12		117	47			48		5	15	12	4		24	285		1	9	14	2	3		3	3	42	77	362
Haddock Mining Co.,		1	3	3	130	50			52	2	8	6	10	10	1	56	326	1	2	9	24	4		19	1	3	51	114	440
Raub Coal Co.,		4	3	1	150	86			42		4	10	2	1	2	18	323	1	1	8	12	1	2	16		4	71	116	439
East Boston Coal Co.,		1	4	6	80	15			59		2			15		106	288	1	3	10	24	7	3	29	19	8	49	153	441
Wilkes-Barre Colliery Co.,		1	3	1	60	50			25	8		6	2	5	2	52	215	1	1	6	6	1		7	6	1	20	49	264
John Conlon Coal Co.,		1	1	2	25	50			15			1				5	100		1	2	1	1		3		2	4	14	114
Healey Coal Co.,		1	1	1	32	14			10	4	2	4	4			4	77		1	2	4	1		8		1	4	21	98
Central Coal Co.,		1	1		35	45			14			4	4	3	1	4	112		1	4	3		2	2		2	6	20	132
Totals,		17	50	43	1,634	1,347	4		572	57	44	116	64	71	13	504	4,536	5	25	110	249	31	13	140	117	37	774	1,501	6,037

*Hudson Coal Co. Outside.

TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Total
Delaware and Hudson Co.,*	Luzerne,	21	22	20	17	20	20	22	21	19	20	20	20	242
Traders Coal Co.,		25	26	26	14	25	23	25	25	25	22	22	23	281
Lehigh Valley Coal Co.,		23	17	16	12	13	14	14	10	15	14	14	15	177
Haddock Mining Co.,		20	20	21	18	20	13	21	20	20	21	21	21	236
Raub Coal Co.,		23	23	24	17	23	23	22	24	24	24	20	21	268
Wilkes-Barre Colliery Co.,		25	25	27	21	22	23	25	26	24	25	24	23	290
East Boston Coal Co.,		15	15	16	11	13	12	15	15	15	12	15	15	169
John Conlon Coal Co.,		25	25	26	25	26	25	25	26	24	25	25	24	301
Healey Coal Co.,		22	20	24	19	20	20	23	22	21	23	19	21	254
Central Coal Co.,		10	10	15	12	21	20	20	25	22	25	24	26	230

*Hudson Coal Co. Outside.

TABLE 4.—Fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 13	Joseph Gromoneski,	Polish,	Miner,	43	M.	1	5	Wyoming,		Instantly killed by runaway car on plane.
20	George Kaesik,	Slavonian,	Laborer,	26	M.	1		Black Diamond,		Instantly killed by fall of rock at face of chamber.
24	Elick Purch,	Russian,	Miner,	28	M.	1	2	Pine Ridge,		Instantly killed by fall of rock at face of chamber.
Feb. 12	Michael Lotsman,	Polish,	Loader,	30	M.	1	3	Delaware,		Instantly killed. Run over by railroad cars. Outside.
22	Joseph Richita,	Italian,	Trackman,	48	M.	1		Pine Ridge,		Fatally injured by car falling on him on gangway. Died March 24.
23	Patrick Clark,	American,	Siltman,	48	M.	1	1	Mineral Spring,		Found dead by assistant mine foreman on second lift of Number 8 slope. It is supposed he fell and ruptured a blood vessel.
28	Stanley Tewenski,	Polish,	Driver,	18	S.			East Boston,		Instantly killed. Crushed between car and rib on gangway.
Mar. 7	William Hall,	English,	Miner,	38	S.			Mineral Spring,		Fatally injured by explosion of blast at face of chamber.
14	Peter Sabbatino,	Italian,	Miner,	26	S.			Ridgewood,	Luzerne,	Fatally injured by fall of rock at face of chamber.
April 3	Allen T. Sellers,	American,	Miner,	44	M.	1	3	Laflin,		Instantly killed by fall of rock while robbing pillars.
	Jacob Lavenski,	Lithuanian,	Laborer,	32	M.	1	4	Laflin,		Instantly killed by fall of rock while robbing pillars.
7	Joseph Jercavage,	Russian,	Miner,	26	M.	1		Conlon,		Instantly killed by explosion of blast.
18	Anthony Yagula,	Polish,	Miner,	57	M.	1		Baltimore No. 5,		Fatally injured. Struck by prop at face of chamber.
21	Frank Avemboski,	Austrian,	Miner,	55	M.	1		Pine Ridge,		Fatally injured by explosion of gas at face of chamber.
June 9	Walter Zubalick,	Russian,	Miner,	31	M.	1	3	Mineral Spring,		Fatally injured by explosion of blast at face of chamber.
29	Chas. Wonsavage,	Russian,	Laborer,	28	S.			Madeira,		Electrocuted while unloading a car of lagging on gangway.
July 6	Samuel Upton,	American,	Electrician,	39	M.	1	4	Baltimore No. 5,		Electrocuted by coming in contact with live wire. Outside.

July	26	Earl Whittaker,	American,	Surveyor,	18	S.		Laflin,		Luzerne,	Electrocuted in tunnel. While going into tunnel he stumbled and grasped the electric wire.
Sept.	2	Felix Waskiewicz,	Polish,	Laborer,	23	M.	1	2	Baltimore No. 5,		Instantly killed by fall of coal at face of chamber.
Oct.	5	Herbert Waitolowski,	Lithuanian,	Laborer,	35	M.	1		Pine Ridge,		Fatally injured by explosion of blast at face of chamber.
	6	Ignatz Sabolic,	Polish,	Laborer,	46	M.	1	3	Black Diamond,		Instantly killed by fall of rock at face of chamber.
	24	Andrew Garnoski,	Lithuanian,	Miner,	62	M.	1		East Boston,		Fatally injured by fall of rock at face of chamber.
	27	Louis Eszar,	Austrian,	Miner,	29	M.	1	1	East Boston,		Fatally injured by fall of rock at face of chamber.
Nov.	13	John Keeney,	American,	Brakeman,	21	S.			Baltimore No. 5,		Instantly killed. Run over by cars. Outside.
Dec.	21	Andrew Kondratick,	American,	Laborer,	19	S.			Pine Ridge,		Fatally injured. Caught by machinery. Outside.

28—3—1916

TABLE 5.—Non-fatal accidents inside aud outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 3	John Burt,	American,	Engineer,	44	S.	Baltimore No. 5,	Luzerne,	Skull fractured. Caught between car and motor. Outside.
5	John Larenz,	Polish,	Laborer,	25	S.	Baltimore No. 5,		Back bruised by explosion of blast at face of chamber.
	Joseph Novak,	Polish,	Miner,	35	M.	Baltimore No. 5,		Arm fractured and body bruised by explosion of blast at face of chamber.
13	Andrew Kosek,	Polish,	Miner,	45	M.	Louise,		Shoulder, head and arm injured by explosion of blast at face of chamber.
15	Martin Kelley,	Irish,	Miner,	36	M.	Mineral Spring,		Finger cut. Struck by piece of coal at face of chamber.
25	Francis Willis,	American,	Platform man,	16	S.	Wyoming,		Arm fractured. Struck by lever. Outside.
Feb. 14	George Moe,	American,	Laborer,	38	M.	Black Diamond,		Arm crushed by fall of coal at face of chamber.
19	Anthony Boscavage,	Polish,	Miner,	55	M.	Louise,		Arm bruised by falling on rail on gangway.
	Walter Vissotski,	American,	Runner,	32	S.	Conlon,		Foot fractured. Run over by cars on plane.
28	John G. Saricks,	American,	Mine foreman,	35	M.	Wyoming,		Arm cut off. Caught in cogs of electric pump.
Mar. 1	Daniel Boyle,	Irish,	Miner,	40	M.	Pine Ridge,		Compound fracture of leg above knee by explosion of blast at face of chamber.
22	Peter Porhorlock,	Austrian,	Miner,	22	S.	Madeira,		Skull fractured by explosion of blast at face of chamber.
	Stanley Trella,	Polish,	Brakeman,	20	S.	Madeira,		Rib fractured and scalp lacerated. Squeezed between car and rib on gangway.
26	Andrew Zaher,	Polish,	Fireman,	41	M.	East Boston,		Face and hands scalded by bursting of tube in boiler house. Outside.
April 3	Norman Honeywell,	American,	Teamster,	33	M.	East Boston,		Leg fractured by steel shaft falling on it. Outside.
12	William Roach,	American,	Slopeman,	35	M.	Louise,		Leg fractured. Run over by cars on slope.
17	Hugh Boyle,	American,	Pumpman,	40	M.	Baltimore Tunnel,		Bone in foot fractured by chain block falling on it.

April	18	Wilber Shorts,	American,	Driver,	19	S.	East Boston,		Ankle fractured. Struck by block.
		Stephen Bullok,	Horwat,	Laborer,	29	S.	East Boston,		Eye lacerated. Struck by piece of steel.
	20	Anthony Kerzinski,	Polish,	Laborer,	31	S.	Pine Ridge,		Collar bone fractured by fall of rock at face of chamber.
	27	John Tetraelli,	Italian,	Miner,	47	M.	Ridgewood,		Face and chest lacerated by explosion of blast at face of chamber.
May	3	Joe Salamaha,	Polish,	Driver,	17	S.	Ridgewood,		Hand lacerated. Caught between cars. Outside.
	16	Joseph Uyjock,	Slavonian,	Laborer,	29	M.	Ridgewood,		Ankle dislocated. Struck by piece of rock.
June	8	Jas. Bonner,	American,	Driver,	18	S.	Baltimore No. 5,		Leg bruised. Caught between cars on gangway.
	10	Barney Frank,	Italian,	Driver,	17	S.	Mineral Spring,		Thigh fractured. Caught between cars and door on gangway.
	15	Andrew Urban,	Slavonian,	Laborer,	45	M.	Laflin,		Ankle bruised. Struck by rail on gangway.
	23	Mike Mickey,	Horwat,	Laborer,	64	M.	East Boston,		Finger fractured. Struck by head block.
July	10	John Romanowski,	Lithuanian,	Miner,	45	M.	Black Diamond,		Hand fractured by fall of rock at face of chamber.
	12	John Howe,	American,	Runner,	19	S.	Mineral Spring,		Left leg fractured and abrasions of right heel, knee and wrist by falling against cars on gangway.
	18	Mike Krise,	Russian,	Laborer,	44	M.	Wyoming,		Top of finger cut off. Caught by buggy in chamber.
		William Castilini,	Italian,	Miner,	31	M.	Ridgewood,		Hip dislocated and scalp lacerated by fall of coal at face of chamber.
	24	William Dombrosky,	Polish,	Laborer,	26	S.	Pine Ridge,		Leg fractured and cut over eye by fall of rock at face of chamber.
Aug.	18	Albert Bevan,	Welsh,	Siltman,	30	M.	Mineral Spring,	Luzerne,	Hips, back and shoulders bruised. Struck by car on plane.
	19	Pavil Rumkewicz,	Polish,	Miner,	34	S.	Madeira,		Rib fractured, lung punctured and head lacerated by explosion of blast.
	21	Fred Ayers,	American,	Laborer,	30	S.	Delaware,		Wrist fractured and body bruised by fall of coal at face of chamber.
	22	John Robertine,	Austrian,	Miner,	47	M.	Baltimore No. 5,		Wrist fractured, scalp lacerated and eye cut by fall of coal at face of chamber.
	30	Joseph Acc,	American,	Runner,	24	S.	Black Diamond,		Thumb crushed. Caught by sprag while spragging cars.
Sept.	2	John X. Smith,	American,	Laborer,	72	M.	Pine Ridge,		Foot bruised. Caught between motor and tie on gangway.
	16	John Warwick,	Polish,	Laborer,	42	M.	Ridgewood,		Two ribs fractured by collar falling on him on gangway.
Oct.	13	Patrick O'Donnell,	Irish,	Miner,	29	S.	Baltimore No. 5,		Back bruised and injured internally by prop falling on him.
	24	Peter Kozack,	Russian,	Miner,	21	M.	East Boston,		Collar bone fractured and head cut by fall of rock at face of chamber.
		George Kubisa,	Slavonian,	Miner,	42	M.	Madeira,		Leg fractured by explosion of blast at face of chamber.
Nov.	3	Philip Condron,	American,	Assistant mine foreman,	39	S.	Conlon,		Ligaments in leg torn by falling in chamber.

TABLE 5.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Nov. 4	Stanley Raboski,	Polish,	Laborer,	28	M.	Baltimore No. 5,	Luzerne,	Skull and spinal column fractured and injured internally by fall of rock while robbing pillars.
11	Michael Mondulick,	American,	Teamster,	40	M.	Delaware,		Arm fractured at wrist and heel injured by falling off wagon. Outside.
13	Walter Baruta,	Polish,	Laborer,	30	M.	Madeira,		Hand lacerated. Struck by piece of coal.
14	Robert Dickson,	English,	Mason,	50	M.	Black Diamond,		Foot fractured by prop falling on it. Outside.
20	Albert Gross,	American,	Driver,	22	S.	Baltimore No. 5,		Leg bruised. Caught by cars on gangway.
29	Paul Adament,	Russian.	Trackman,	50	M.	Black Diamond,		Collar bone fractured. Struck by rail.
Dec. 2	Bennie Wieichecoski,	Polish,	Miner,	40	M.	Black Diamond,		Eye injured by fall of coal at face of chamber.
14	Leo Delnavich,	Polish,	Miner,	24	S.	East Boston,		Head cut, back bruised and three small bones in foot fractured by fall of rock at face of gangway.
22	Joseph Kanasky,	American,	Miner,	37	M.	Pine Ridge,		Ruptured while lifting car on track on gangway.
23	Stanley Panawich,	American,	Laborer,	52	M.	Pine Ridge,		Foot bruised. Struck by rail. Outside.

CONDITION OF COLLIERIES

DELAWARE AND HUDSON COMPANY, INSIDE. HUDSON COAL COMPANY, OUTSIDE

Laflin, Delaware, Pine Ridge, Baltimore No. 5 and Baltimore Tunnel Collieries.—Ventilation, drainage and condition as to safety, good.

TRADERS COAL COMPANY

Ridgewood Colliery.—Ventilation and drainage, fair. Condition as to safety, good.

LEHIGH VALLEY COAL COMPANY

Mineral Spring Colliery.—Ventilation, drainage and condition as to safety, good.

HADDOCK MINING COMPANY

Black Diamond Colliery.—Ventilation, drainage and condition as to safety, fair.

RAUB COAL COMPANY

Louise Colliery.—Ventilation, drainage and condition as to safety, fair.

EAST BOSTON COAL COMPANY

East Boston Colliery.—Ventilation, drainage and condition as to safety, good.

WILKES-BARRE COLLIERY COMPANY

Madeira Colliery.—Ventilation and drainage, fair. Condition as to safety, good.

JOHN CONLON COAL COMPANY

Conlon Colliery.—Ventilation, drainage and condition as to safety, good.

HEALEY COAL COMPANY

Miners Mills Colliery.—Ventilation, drainage and condition as to safety, good.

CENTRAL COAL COMPANY

Wyoming Colliery.—Ventilation, drainage and condition as to safety, good.

IMPROVEMENTS

DELAWARE AND HUDSON COMPANY, INSIDE. HUDSON COAL COMPANY, OUTSIDE

Laflin Colliery.—Rock plane 450 feet long was driven from the Bottom Red Ash to the Mercy bed. A tunnel 60 feet long was driven from the Bottom to the Top Red Ash.

The electrification of all air driven equipment was completed and 4 electric locomotives were installed.

Retimbered main shaft.

Delaware Colliery.—The following tunnels were driven: No. 29, Ross to Red Ash, 1160 feet; No. 30, Red Ash through fault, 850 feet; No. 31, Ross to Checker, 330 feet; No. 32, Ross to Checker, 250 feet; No. 33, Cooper to Five foot, 320 feet. Drove No. 17 plane from Ross to Bennett, 210 feet.

Pine Ridge Colliery.—Extended Laurel Run No. 4 plane 450 feet to the surface for a manway. A second opening connecting No. 19 plane, Red Ash, with Delaware, was extended 160 feet.

The breaker was remodeled and improved.

Baltimore No. 5 Colliery.—Two tunnels, 170 feet long, were driven from the Red Ash to Top Split and one 190 feet from the Abbott to Snake Island.

The Baltimore landings at Conyngham and No. 4 shaft and the Red Ash landing at Baltimore No. 5 shaft were secured by concrete walls and steel beams.

LEHIGH VALLEY COAL COMPANY

Mineral Spring Colliery.—Two concrete fire boss stations were constructed; one in the old slope at Jones lift and the other at the foot of No. 2 shaft, Red Ash vein.

Concrete floor was laid in the carpenter shop, partitions torn out and steel columns substituted for roof support. A substantial concrete platform was constructed in front of the ware-house and minor improvements were made on the inside.

EAST BOSTON COAL COMPANY

East Boston Colliery.—Drove tunnel from Eleven Foot to Bennett, new Bennett slope.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in Kingston, June 6 and 7. The Board of Examiners was composed of John B. Corgan, Inspector; Gilbert Jones, Superintendent, Dorranceton; Thomas Thornton, Miner, Parsons; Charles Semanski, Miner, Swoyersville; John J. McNelis, Clerk, Luzerne.

The following persons passed a satisfactory examination and were granted certificates:

MINE FOREMEN

Patrick H. Conway, Old Forge; James Dixon, Hudson; John J. Llewellyn, Wilkes-Barre; Frank Davitt, Miners Mills; Timothy Cronin, Nathaniel Dixon, Parsons; William F. Corgan, Luzerne; John Hosey, Kingston.

ASSISTANT MINE FOREMEN

Ellsworth Austin, Joseph Loscoskie, Con Maloney, Thomas Summerson, Parsons; Thomas Bottoms, Jr., Michael J. Condon, Mark Luksic, Louis Sulzbacher, Luzerne; William Brazill, Miners Mills; Albert Joseph Bevan, Wilkes-Barre; Anthony John Mattick, Anthony M. Sudnick, Benjamin Eckertt, Hudson; Thomas Nankwell, Cecil Ninness, Plains; Martin Shields, Forty Fort.

ELEVENTH DISTRICT

LUZERNE COUNTY

Wilkes-Barre, Pa., February 12, 1917.

Hon. James E. Roderick, Chief of Department of Mines

Sir: I have the honor to transmit herewith the annual report of the Eleventh Anthracite District for the year ending December 31, 1916.

Respectfully submitted,

THOMAS J. WILLIAMS,
Inspector.

SUMMARY OF STATISTICS

Number of collieries	8
Number of mines,	18
Number of mines in operation,	18
Number of gaseous mines in operation,	16
Number of non-gaseous mines in operation,	2
Number of tons of coal shipped to market,	2,684,527
Number of tons used at mines for steam and heat,	273,302
Number of tons sold to local trade and used by employes,	277,205
Number of tons produced,	3,235,034
Number of persons employed inside of mines,	4,606
Number of persons employed outside	1,356
Number of persons employed inside between 16 and 21 years,	362
Number of persons employed outside between 14 and 21 years,	189
Number of fatal accidents inside,	30
Number of non-fatal accidents inside,	99
Number of non-fatal accidents outside,	9
Number of tons of coal produced per fatal accident inside,	107,834
Number of tons produced per fatal accident inside and outside,	107,834
Number of persons employed per fatal accident inside,	154
Number of persons employed per fatal accident inside and outside,	199
Number of persons employed per non-fatal accident inside,	46
Number of persons employed per non-fatal accident outside,	151
Number of persons employed per non-fatal accident inside and outside,	55
Number of wives made widows,	22
Number of children made orphans,	45
Number of steam locomotives outside,	20
Number of compressed air locomotives inside,	13
Number of electric motors inside,	17
Number of tubular boilers,	70
Number of steam engines of all classes,	265

Number of electric dynamos,	8
Number of pumps of all classes,	103
Number of pumps delivering water to surface,	19
Number of air compressors,	16
Number of fans in use,	24

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Lehigh and Wilkes-Barre Coal Company,	1,595,989
Lehigh Valley Coal Company,	1,227,307
Wilkes-Barre Anthracite Coal Company,	235,516
Red Ash Coal Company,	176,222
Total,	3,235,034

Production by Counties

Luzerne,	3,235,034

TABLE B.—Fatal and non-fatal accidents inside and outside of mines, number of tons of coal produced per accident, number of persons employed, number employed per accident

Names of Operators	Fatal Accidents			Non-fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Total number of employes	Number of employes inside per fatal accident	Number of employes outside per fatal accident	Number of employes inside per non-fatal accident	Number of employes outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Lehigh and Wilkes-Barre Coal Co.,	13	.....	13	54	3	57	122,768	29,555	2,249	766	3,015	173	.....	42	255
Lehigh Valley Coal Co.,	12	.....	12	32	2	34	102,276	38,353	1,727	379	2,106	144	.....	54	190
Wilkes-Barre Anthracite Coal Co.,	1	.....	1	8	3	11	235,516	29,440	440	74	514	440	.....	55	25
Red Ash Coal Co.,	4	.....	4	5	1	6	44,056	35,244	190	137	327	48	.....	38	137
Totals and averages,	30	.....	30	99	9	108	167,834	32,677	4,606	1,356	5,962	154	.....	46	151

TABLE C.—Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,	2				1					1			4	13.33
Falls of roof,	2	1			1								4	13.33
Mine cars,			1					1		2			4	13.33
Explosions of gas,			6				2						8	26.67
Suffocation by gas, etc.,			2										2	6.67
Blasts, premature and otherwise,			1				1	2		3	1		8	26.67
Totals,	4	1	10		2		3	3		6	1		30	100.00
Outside														
No accidents														

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,	1	2	3			5	1	1			3		16	16.16
Falls of roof,				1	2	3	1	1	3	4	1	2	18	18.18
Mine cars,	2	2	2	1	2	1	1	2	3	3	2	1	22	22.23
Explosions of gas,	2			1				2		2	1		8	8.08
Explosions of powder and dynamite,												1	1	1.01
Blasts, premature and otherwise,	1	1				1	1	1	1			1	7	7.07
Machinery,										1			1	1.01
By falling,									1				1	1.01
By rust,									1				1	1.01
Struck by rope,								1		1	1		3	3.03
By cage,								1				1	2	2.02
Struck by axe,						1							1	1.01
Explosion of air line,						2							2	2.02
Struck by iron,						1							1	1.01
Struck by timber,			1				1			3			5	5.05
Struck by piece of coal and rock,	2		2		3		1		1		1		10	10.10
Totals,	8	5	8	3	7	14	6	9	10	14	9	6	99	100.00
Outside														
Cars,			1		1						1		3	33.33
Machinery,			2	2							1		5	55.56
Burned by flame from boiler fire,								1					1	11.11
Totals,			3	2	1			1			2		9	100.00
Grand totals,	8	5	11	5	8	14	6	10	10	14	11	6	108	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Assistant mine foremen										1			1
Miners	2		4		2		2	1		5	1		17
Miners' laborers	1		2					1					4
Drivers and runners	1		1										2
Doorboys and helpers			2										2
Timbermen and rockmen		1											1
Slatemen			1										1
Engineers								1					1
Companymen							1						1
Totals	4	1	10		2		3	3		6	1		30
Outside													
No accidents													

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Assistant mine foremen	2		1			3							6
Miners	2	2	5	2	3	10	2	6	2	6	5	4	49
Miners' laborers	1	1	1		2		2	1	3	1	2		14
Masons											1		1
Companymen						1	1		1				3
Drivers and runners	1	1		1	1		1		3	4		1	13
Motormen and assistants	1												1
Doorboys and helpers								1					1
Footmen	1										1	1	3
Timbermen and rockmen		1	1							3			5
Pumpmen and pipemen					1								1
Shaftmen								1					1
Machinists									1				1
Totals	8	5	8	3	7	14	6	9	10	14	9	6	99
Outside													
Sweepers											1		1
Laborers								1			1		2
Timbermen					1								1
Jig runners				1									1
Loaders			1										1
Oilers			1										1
Engineers			1	1									2
Totals			3	2	1			1			2		9
Grand totals	8	5	11	5	8	14	6	10	10	14	11	6	108

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,								1		1			2
English,		1	1										2
Welsh,			1				1			1			3
Polish,	3		3		1								7
Italian,					1								1
Slavonian,			1							1			2
Lithuanian,	1		2				1	2					6
Austrian,			2				1			1	1		5
Russian,										2			2
Totals,	4	1	10		2		3	3		6	1		39

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	1		2	2	2	1	2	2	4	2	2	1	21
English,		1											1
Welsh,	2	1	2			4	2			2		1	14
Irish,		1											1
German,								1					1
Polish,	2		2	3	4	2		5		3	4	2	27
Italian,			1						1		1		3
Slavonian,	1		2			2	1	1	1	1	1		10
Lithuanian,	1	1	1		2	4		1	2	1	3	1	17
Austrian,	1		1				1			1			4
Russian,		1				1			2	2		1	7
Swedish,										1			1
Magyar,										1			1
Totals,	8	5	11	5	8	14	6	10	10	14	11	6	108

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and Types of Safety Lamps used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Lehigh and Wilkes-Barre Coal Co.										
Hollenback No. 2 Colliery:										
Number 2,	Luzerne,	J or Abbott,	60					Gaseous,	362	
Number 1,		I or Kidney,	60	587	1,640	14				
Number 2,		H or Hillman,	84							
Number 3,		G or Stanton,	48							
Number 4,		F or Five Foot,	48							
		E or Baltimore,	168							
		C or Ross,	48							
		B or Top Red Ash,	54							
		B or Bot Red Ash,	114							
South Wilkes-Barre No. 5 Colliery:										
Number 3 Shaft,	Luzerne,	J or Abbott,	60					Gaseous,	692	
Number 5 Shaft,		I or Kidney,	60	700						
		H or Hillman,	84	1,039						
		G or Stanton,	48							
		F or Five Foot,	48							
		E or Cooper,	84							
		E or Baltimore,	84							

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening: Shaft Depth	Slope (Coal or Rock) Length	Slope (Coal or Rock) Average pitch—degrees	Drift	Gaseous or non-gaseous	Number and Types of Safety Lamps used: Flame	Electric
Stanton No. 7 Colliery:		J or Abbott,	60					Gaseous,	572	
		I or Kidney,	60	844						
		H or Hillman,	84	297	3,140	9				
Stanton No. 7, Stanton No. 4, Empire No. 4,	Luzerne,	G or Stanton,	48							
		F or Five Foot,	48							
		E or Baltimore,	168							
		D or Skidmore,	48							
		C or Ross,	48							
		B or Top Red Ash,	54							
		B or Bottom Red Ash,	114							
Lehigh Valley Coal Co. Dorrance Colliery:										
		J or Abbott,	60					Gaseous,		
		I or Bowkley,	78						350	70
		H or Hillman,	90	580						
Dorrance,	Luzerne,	E or Cooper,	80						350	
		F or Five Foot,	60							
		E or Lance,	70							
		E or Bennett,	60							
		B or Red Ash,	144	1,087						
Prospect Colliery:										
		H or Hillman,	102	730	1,600	23		Gaseous,		180
		I or Bowkley,	96						339	
		J or Abbott,	60	1,030	350	23				
Prospect, Oakwood,	Luzerne,	K or Snake Island,	72							
		B or Red Ash,						Gaseous,		
		D or Marcy,	48							
		E or Upper Baltimore,	96							
		F or Five Foot,	60							

Henry Colliery:										
Henry,	Luzerne,	H or Hillman,	96							
		E or Baltimore,	84							77
		I or Bowkley,	78						375	
		F or Five Foot,	60							
		E or Baltimore,	84					Gaseous,		
		F or Red Ash,	96	770						
		D or Skidmore,	36							
		H or Hillman,	90	1,500	10					
		F or Five Foot,	60							
Wilkes-Barre Anthracite Coal Co. Hillman Vein Colliery:										
Hillman Vein,	Luzerne,	J or Abbott,	60	450				Gaseous,	75	39
		I or Kidney,	60							
		H or Hillman,	84							
		G or Stanton,	42							
		F or Sump,	12							
		E or Baltimore,	144							
		C or Top Ross,	36							
		C or Bottom Ross,	48							
		B or Top Red Ash,	60							
		B or Red Ash,	120							
Red Ash Coal Co. Red Ash No. 2 Colliery:										
Red Ash No. 1,	Luzerne,	B or Red Ash,	120	1,600	15			Non-gas.,		
		B or Six Foot,	96							
		C or Ross,	100							
		D or Skidmore,	67							
Red Ash No. 2,	Luzerne,	B or Red Ash,	148	750	20	621		Non-gas.,		
		B or Six Foot,	114							
		C or Ross,	129							

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Lehigh and Wilkes-Barre Coal Co.												
Hollenback No. 2 Colliery:												
Number 2,	Luzerne,	J or Abbott, I or Kidney, H or Hillman,	Guibal,	35	48	1.6	Steam,	186,535	219,780	166,760	15	349
Number 1,		G or Stanton,	Guibal,	24	71	.9	Steam,					
Number 2,		F or Five Foot,	Guibal,	35	48	1.7	Steam,					
Number 3,		E or Baltimore,	Guibal,	35	48	1.7	Steam,					
Number 4,		C or Ross, B or Top Red Ash, B or Bot Red Ash,										
South Wilkes-Barre No. 5 Colliery:												
Number 3 Shaft,	Luzerne,	J or Abbott, I or Kidney, H or Hillman,	Guibal,	35	48	1.9	Steam,	454,210	507,520	344,120	45	721
Number 5 Shaft,		G or Stanton,	Guibal,	35	48	1.9	Steam,					
		F or Five Foot,	Guibal,	35	48	2.1	Steam,					
		E or Cooper,	Guibal,	35	48	2.1	Steam,					
		E or Baltimore,										
Stanton No. 7 Colliery:												
Stanton No. 7,	Luzerne,	J or Abbott, I or Kidney, H or Hillman,										
Stanton No. 4,		G or Stanton,	Guibal,	24	71	1.1	Steam,	496,614	540,705	456,440	35	776
Empire No. 4,		F or Five Foot,	Guibal,	35	48	2	Steam,					
		E or Baltimore,	Guibal,	34.5	48	2	Steam,					
		D or Skidmore, C or Ross, B or Top Red Ash, B or Bottom Red Ash										

Lehigh Valley Coal Co.												
Dorrance Colliery:												
Dorrance,	Luzerne,	J or Abbott, I or Bowkley, H or Hillman,	Guibal,	35	48	2.2	Steam,	178,000	255,000	140,000	10	285
		E or Cooper,	Guibal,	30	54	1.9	*					
		F or Five Foot, E or Lance, E or Bennett, B or Red Ash,	Guibal,	28	62	2.2	Steam,	108,500 111,300	119,200 125,400	53,000 52,500	8 5	103 232
Prospect Colliery:												
Prospect, Oakwood,	Luzerne,	H or Hillman, I or Bowkley, J or Abbott, K or Snake Island,	Guibal,	20 *25	68	1.4	Steam,	98,720	105,850	32,415	6	66
		B or Red Ash,	Guibal,	30	55	2	Steam,	153,850	156,890	87,351	8	197
		D or Marcy, E or Upper Baltimore, F or Five Foot,	Guibal,	30	54	2	Steam,	159,870	163,210	105,605	6	207
Henry Colliery:												
Henry,	Luzerne,	H or Hillman, E or Baltimore, I or Bowkley,	Guibal,	30	54	2	Steam,	91,239	104,395	47,646	6	74
		F or Five Foot,	Guibal,	28	46	1.6	Steam,	93,985	104,764	86,762	8	175
		E or Baltimore,	Guibal,	25	5	1	Steam,	96,411	111,577	87,825	9	74
		F or Red Ash,	Guibal,	28	52	1.9	Steam,	104,723	114,601	56,620	5	175
		D or Skidmore, H or Hillman, F or Five Foot,	Guibal,	20	75	2.2	Steam,	93,386	129,176	86,575	7	136
Wilkes-Barre Anthracite Coal Co.												
Hillman Vein Colliery:												
Hillman Vein,	Luzerne,	J or Abbott, I or Kidney, H or Hillman,	Jeffrey,	18	98	3.5	Steam,	154,090	167,015	110,675	5	440
		G or Stanton,	Tamaqua,	30	54	*						
		F or Sump, E or Baltimore, C or Top Ross, C or Bottom Ross, B or Top Red Ash, B or Red Ash,										

*Emergency fan.

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Red Ash Coal Co. Red Ash No. 2 Colliery:												
Red Ash No. 1,	Luzerne,	B or Red Ash, B or Six Foot, C or Ross, D or Skidmore,	Vulcan,	15	76	1.5	Steam,	42,000	46,000	14,500	3	175
Red Ash No. 2,	Luzerne,	B or Red Ash, B or Six Foot, C or Ross,					Natural,	38,620	6,655		4	15

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	General Superintendent	Post Office	Superintendent	Post Office	Railroad to Mine
Lehigh and Wilkes-Barre Coal Co. Hollenback No. 2, South Wilkes-Barre No. 5, Stanton No. 7, Empire Washery,	Luzerne,	C. F. Huber,	Wilkes-Barre,	E. J. Newbaker,	Wilkes-Barre,	C. R. R. of N. J.
Lehigh Valley Coal Co. Dorrance, Prospect, Henry,	Luzerne,	Thomas Thomas,	Wilkes-Barre,	John H. Haertter,	Wilkes-Barre,	Lehigh Valley
Wilkes-Barre Anthracite Coal Co. Hillman Vein, Hillman Vein Washery,	Luzerne,	Thomas H. Price,	Wilkes-Barre,	Thomas H. Price,	Wilkes-Barre,	Lehigh Valley
Red Ash Coal Co. Red Ash No. 2, Red Ash Washery,	Luzerne,	William D. Jones,	Wilkes-Barre,			C. R. R. of N. J.

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives		
										Pounds of black powder used	Pounds of dynamite used	Pounds of permissible explosives used
Lehigh and Wilkes-Barre Coal Co.												
Hollenback No. 2,	Luzerne,	213,042	29,434	55,400	297,876	243	649	7	6	210,550	11,684	42,646
South Wilkes-Barre No. 5,		413,254	34,322	102,690	550,266	250	1,069	1	20	278,850	17,812	133,686
Stanton No. 7,		515,824	48,739	29,487	594,050	251	1,225	5	30	459,125	21,583	46,000
		1,142,120	112,495	187,577	1,442,192	------	2,943	13	56	948,525	51,079	222,326
Empire Washery,	Luzerne,	153,797	----------	----------	153,797	277	72	----	1	----------	----------	----------
Totals,		1,295,917	112,495	187,577	1,595,989	------	3,015	13	57	948,525	51,079	222,326
Lehigh Valley Coal Co.												
Dorrance,	Luzerne,	386,625	53,989	57,030	497,644	220	751	5	12	392,125	12,419	----------
Prospect,		236,558	38,218	3,711	278,487	241	653	4	14	230,875	12,200	----------
Henry,		399,062	42,588	9,526	451,176	*	702	3	8	268,400	207,600	----------
Totals,		1,022,245	134,795	70,267	1,227,307	------	2,106	12	34	891,400	232,219	----------
Wilkes-Barre Anthracite Coal Co.												
Hillman Vein,	Luzerne,	143,029	16,470	11,932	171,431	279	499	1	11	130,700	33,500	1,000
Hillman Vein Washery,		64,085	----------	----------	64,085	279	15	----	----	----------	----------	----------
Totals,		207,114	16,470	11,932	235,516	------	514	1	11	130,700	33,500	1,000

*Coal prepared at Prospect breaker.

Red Ash Coal Co.												
Red Ash No. 2,	Luzerne,	29,687		2,422	102,109	128	327	4	6	31,250	18,575	
Red Ash Washery,		59,564	9,542	5,007	74,113	128						
Totals,		159,251	9,542	7,429	176,222		327	4	6	31,250	18,575	
Grand totals,		2,684,527	273,302	277,205	3,235,034		5,962	30	108	2,001,875	335,373	223,326

TABLE 2.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Names of Operators	County	Power Plant										Pumps				Haulage					Air Compressors	
		Boilers				Engines											Locomotives					
		Cylindrical		Tubular		Steam Engines (All Classes)		Internal Combustion Engines (Gas)		Electric Dynamos (All Classes)				Pumps Delivering Water to the Surface								
		Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total kilowatts	Number	Total capacity in gallons per minute	Number	Approximate number of gallons per minute	Number of horses and mules	Gasoline	Steam	Air	Electric	Number	Total capacity cubic feet per minute
Lehigh and Wilkes-Barre Coal Co.,	Luzerne,			39	7,845	153	16,886			1	500	31	13,929	6	2,607	349		7	11		7	13,393
Lehigh Valley Coal Co.,				24	6,404	81	13,313			5	2,175	65	31,910	7	11,695	310		10	2	16	7	7,001
Wilkes-Barre Anthracite Coal Co.,				4	2,000	9	2,110			2	800	7	2,999	2	1,200	27				1	2	1,100
Red Ash Coal Co.,				3	900	22	1,088							4	1,200	50		3				
Totals,				70	17,149	265	33,397			8	3,475	103	48,739	19	16,702	736		20	13	17	16	21,494

TABLE 3.—Part 1.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside: Mine foremen	Inside: Assistant mine foremen	Inside: Fire bosses	Inside: Miners	Inside: Miner's laborers	Inside: Machine miners	Inside: Machine runners and scrapers	Inside: Drivers and runners	Inside: Motormen and assistants	Inside: Doorboys and helpers	Inside: Trackmen and bratticemen	Inside: Timbermen and rockmen	Inside: Pumpmen and pipemen	Inside: Electricians and helpers	Inside: All other employes	Total inside	Outside: Superintendents	Outside: Foremen	Outside: Blacksmiths and carpenters	Outside: Engineers and firemen	Outside: Machinists and helpers	Outside: Trackmen and helpers	Outside: Slate pickers (boys)	Outside: Slate pickers (men)	Outside: Office employes	Outside: All other employes	Total outside	Grand total inside and outside
Lehigh and Wilkes-Barre Coal Co.,	Luzerne,	4	5	56	990	363	----	----	233	18	61	74	93	23	----	329	2,249	----	4	22	101	4	4	12	89	26	15	493	766	3,015
Lehigh Valley Coal Co.,		10	55	----	674	220	----	----	209	38	81	65	69	19	4	288	1,727	----	3	23	74	18	4	6	26	9	10	224	379	2,106
Wilkes-Barre Anthracite Coal Co.,		1	1	5	120	110	----	----	88	4	21	30	16	12	2	30	440	1	3	7	12	3	----	3	----	1	9	29	74	514
Red Ash Coal Co.,		2	2	----	85	58	----	----	14	----	----	5	17	6	----	1	190	----	3	12	12	----	----	----	10	3	3	97	137	327
Totals,		17	63	61	1,869	751	----	----	544	60	163	174	195	60	6	643	4,606	1	13	64	265	11	18	118	46	37	843	1,356	5,962

TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Total
Lehigh and Wilkes-Barre Coal Co.,	Luzerne,	18	19	15	14	21	24	23	23	23	24	21	23	248
Lehigh Valley Coal Co.,		23	19	20	13	18	18	19	20	18	20	20	22	230
Wilkes-Barre Anthracite Coal Co.,		23	21	24	20	21	22	23	26	25	25	25	24	279
Red Ash Coal Co.,		17	15	19	7	8	9	7	8	9	9	9	11	128

TABLE 4.—Fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 3	Phillip Gutowski,	Polish,	Runner,	21	S.			Red Ash No. 2,		Killed by fall of roof on gangway.
17	Frank Meahaleck,	Polish,	Miner,	24	M.	1		Stanton No. 7,		Killed by fall of roof at face of chamber.
20	Paul Novanch,	Polish,	Laborer,	39	S.			Red Ash No. 2,		Killed by fall of coal at face of pillar.
26	Joseph Zognoskie,	Lithuanian,	Miner,	37	M.	1	5	South Wilkes-Barre No. 5		Killed by fall of coal at face of chamber.
Feb. 18	John Mildrum,	English,	Timberman,	50	M.	1	2	Henry,		Killed by fall of roof in tunnel.
Mar. 2	Joseph Regilla,	Austrian,	Doortender,	55	M.	1		Hillman Vein,		Killed by cars in gangway.
	George Harney,	English,	Slateman,	57	M.	1				
	Edwin Jones,	Welsh,	Doortender,	56	S.					Killed by an explosion of gas on gangway. A description of this accident is given in preliminary part of this report.
9	John Miskin,	Slavonian,	Driver,	19	S.					
	Leo Kazenskie,	Polish,	Miner,	21	S.			Hollenback No. 2,		
	William Kazenskie,	Polish,	Miner,	32	M.	1	4			
	Gabriel Kamoconka,	Austrian,	Laborer,	43	M.	1				
16	William Vincavage,	Lithuanian,	Miner,	63	M.	1	3	Red Ash No. 2,		Suffocated by gas from mine fire in tunnel.
	George Slitkas,	Lithuanian,	Laborer,	50	S.					
26	John Matueska,	Polish,	Miner,	45	M.	1	2	Hollenback No. 2,		Killed by an explosion of blast in chamber.
May 4	Anthony Laffey,	Polish,	Miner,	49	M.	1	7	Dorrance,		Killed by fall of roof at face of chamber.
29	Peter Sarnlucci,	Italian,	Miner,	45	M.	1	2	Henry,		Killed by fall of coal in chamber.
July 5	William Ford,	Welsh,	Miner,	47	M.	1		Stanton No. 7,		Killed by an explosion of blast at face of chamber.
13	Paul Gino,	Austrian,	Companyman,	62	M.	1		Prospect,	Luzerne,	Killed by an explosion of gas on gangway.
	Mike Powlowchos,	Lithuanian,	Miner,	37	S.			Prospect,		Killed by an explosion of gas at face of chamber.
Aug. 2	Joseph Simokaites,	Lithuanian,	Miner,	54	M.	1	2	Stanton No. 7,		Killed by an explosion of blast in chamber.
9	John Yoncovitz,	American,	Engineer,	19	S.			Stanton No. 7,		Killed by falling under locomotive in tunnel.
14	Joseph Yakusonies,	Lithuanian,	Laborer,	47	M.	1		Stanton No. 7,		Killed by an explosion of blast at face of chamber.
Oct. 1	Jonathan Jones,	Welsh,	Assistant foreman,	54	M.	1	1	Dorrance,		Killed by runaway cars on slope.
	Stephen Drelezick,	Russian,	Miner,	44	M.	1	5			
10	Charles Simmonson,	American,	Miner,	43	M.	1	4	Henry,		Killed by an explosion of blast at face of chamber.
15	John Sokol,	Russian,	Miner,	49	M.	1	2	Prospect,		Killed by an explosion of blast in chamber.
16	Frank Meloskie,	Austrian,	Miner,	28	M.	1	2	Dorrance,		Killed by fall of coal at face of airway.
28	Joseph Matisko,	Slavonian,	Miner,	44	M.	1		Prospect,		Killed by an explosion of blast at face of chamber.
Nov. 17	John Gelatka,	Austrian,	Miner,	45	M.	1	4	Dorrance,		Killed by an explosion of blast at face of chamber.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 7	Benjamin Glazwskie,	Polish,	Miner,	24	S.	Stanton No. 7,		Leg fractured. Struck by a piece of coal in chamber.
13	Joseph Peria,	American,	Runner,	19	S.	Dorrance,		Foot injured by cars on gangway.
14	Stanley Gastaws,	Lithuanian,	Miner,	35	S.	South Wilkes-Barre No. 5,		Back lacerated by an explosion of blast in chamber.
15	George Soltis,	Austrian,	Footman,	21	S.	Prospect,		Arm fractured. Struck by a piece of coal that fell down shaft.
18	Andrew Kovalick,	Slavonian,	Motorman,	28	M.	Prospect,		Arm fractured by cars on gangway.
	Thomas J. Phillips,	Welsh,	Assistant foreman,	41	M.	Stanton No. 7,		Face and hands burned by an explosion of gas in chamber.
19	Griffith Jones,	Welsh,	Assistant foreman,	33	S.			Toe fractured by fall of coal in chamber.
28	Emille Barkoskie,	Polish,	Laborer,	35	M.	Stanton No. 7,		Leg fractured by fall of coal at face of chamber.
Feb. 8	William Kodarka,	Lithuanian,	Laborer,	55	M.	Stanton No. 7,		Leg fractured by cars on gangway.
16	Thomas Lavelle,	Irish,	Timberman,	42	M.	Dorrance,		Arm fractured by an explosion of blast at face of chamber.
19	Anthony Bales,	Russian,	Miner,	31	S.	South Wilkes-Barre No. 5,		Leg fractured by cars in tunnel.
25	Arthur Bennett,	English,	Driver,	24	S.	Hollenback No. 2,		Back injured by fall of coal in chamber.
28	Jacob Ludwig,	Welsh,	Miner,	47	M.	Prospect,		Hand cut off by machinery. Outside.
Mar. 8	John Haley,	American,	Engineer,	21	S.	South Wilkes-Barre No. 5,	Luzerne,	Seriously injured by fall of coal in chamber.
9	Thomas I. Evans,	Welsh,	Assistant foreman,	44	M.	Hollenback No. 2,		Arm fractured by cars in chamber.
	Dominick Stancavage,	Polish,	Miner,	43	M.	Dorrance,		Collar bone fractured by timber falling on him in chamber.
	Joseph Dobinskie,	Lithuanian,	Miner,	42	M.	Dorrance,		Knee fractured by cars. Outside.
12	George Konnway,	Austrian,	Loader,	29	M.	Prospect,		Foot fractured by machinery in breaker. Outside.
15	Joseph Terio,	Italian,	Oiler,	29	M.	Hillman Vein,		Eye injured by a flying piece of coal in chamber.
16	David Lewis,	Welsh,	Miner,	43	M.	South Wilkes-Barre No. 5,		Ankle dislocated. Struck by a piece of rock in chamber.
24	Charles Husten,	Slavonian,	Laborer,	30	S.	Red Ash No. 2,		Ankle fractured by fall of coal at face of chamber.
27	Gabriel Farnet,	Polish,	Miner,	26	M.	Stanton No. 7,		Hip dislocated by cars on gangway.
28	William Brown,	American,	Timberman,	47	M.	South Wilkes-Barre No. 5,		Head lacerated by fall of coal in chamber.
30	Mike Yasewicta,	Slavonian,	Miner,	49	M.	Prospect,		

April	6	John Zernak,	Polish,	Miner,	25	M.	Stanton No. 7,		Face and hands burned by an explosion of gas at face of chamber.
	12	Paul Butcher,	Polish,	Driver,	18	S.	Stanton No. 7,		Hand fractured by cars on gangway.
	13	Frank Delancy,	American,	Jig runner,	33	M.	Hillman Vein,		Ankle fractured in chute. Outside.
	18	Walter Crow,	American,	Engineer,	19	S.	Hillman Vein,		Leg fractured by machinery. Outside.
	29	John Pekut,	Polish,	Miner,	42	M.	Stanton No. 7,		Leg fractured by fall of roof at face of chamber.
May	3	Stanley Martin,	Polish,	Timberman,	24	S.	Stanton No. 7,		Foot bruised by cars. Outside.
	5	Joseph Radovitch,	Polish,	Laborer,	30	M.	Dorrance,		Foot lacerated by cars in chamber.
		Frank Usaitus,	Lithuanian,	Miner,	37	M.	South Wilkes-Barre No. 5,		Seriously injured by fall of roof in chamber.
	6	John Lipsett,	American,	Driver,	21	S.	Stanton No. 7,		Arm fractured by cars on gangway.
	14	John Cronowskie,	Polish,	Laborer,	28	S.	South Wilkes-Barre No. 5,		Eye injured. Struck by a piece of coal in chamber.
	18	John Pitch,	Polish,	Miner,	26	M.	Stanton No. 7,		Hand lacerated by flying coal in chamber.
	20	George Urgitis,	Lithuanian,	Miner,	37	M.	Stanton No. 7,		Seriously injured by fall of roof in chamber.
	28	John Gavin,	American,	Pumpman,	26	M	Prospect,		Leg fractured by coal rolling on him in chamber.
June	6	Joseph Van Horn,	American,	Assistant foreman,	38	M.	Stanton No. 7,		Eye injured by bolt blowing out of high pressure line.
		John George,	Welsh,	Assistant foreman,	34	M.	Stanton No. 7,		Eyes injured by an explosion of air line on gangway.
		Griffith D. Jones,	Welsh,	Assistant foreman,	41	M.	Stanton No. 7,		Shoulder fractured by explosion of air line on gangway.
	9	Richard Roberts,	Welsh,	Miner,	53	S.	Stanton No. 7,		Knee sprained by fall of coal in chamber.
		Mathew Kiercitus,	Lithuanian,	Companyman,	23	M.	South Wilkes-Barre No. 5,	Luzerne,	Elbow lacerated by fall of coal at face of chamber.
	12	Joseph Millman,	Lithuanian,	Miner,	55	M.	Red Ash No. 2,		Ribs fractured by fall of coal in chamber.
		Joseph Sobey,	Polish,	Miner,	39	M.	South Wilkes-Barre No. 5,		Pelvis fractured by fall of coal in chamber.
		William T. Lewis,	Welsh,	Miner,	47	M.	Hollenback No. 2,		Leg fractured. Struck by an axe in chamber.
	14	John Hoopesey,	Slavonian,	Miner,	42	M.	Red Ash No. 2,		Head lacerated by fall of roof on gangway.
	20	Joseph Towko,	Slavonian,	Miner,	54	M.	Prospect,		Rib and shoulder fractured by cars on gangway.
	21	Joseph Rudaski,	Polish,	Miner,	23	M.	South Wilkes-Barre No. 5,		Pelvis fractured by fall of coal in chamber.
		Mike Bobnis,	Lithuanian,	Miner,	30	M.	Stanton No. 7,		Contusion of chest by fall of roof at face of chamber.
	28	John Kuch,	Russian,	Miner,	39	M.	Prospect,		Leg fractured by an explosion of blast in chamber.
	29	Frank Manyavick,	Lithuanian,	Miner,	29	S.	Stanton No. 7,		Leg lacerated by fall of roof at face of chamber.
July	6	Edward Campbell,	American,	Runner,	36	M.	South Wilkes-Barre No. 5,		Hand injured by cars on gangway.
	10	John D. Evans,	Welsh,	Miner,	53	W.	Stanton No. 7,		Toes fractured. Struck by a piece of rock that rolled from gob.
		William Jones,	American,	Companyman,	41	M.	Henry,		Arm fractured by fall of coal in chamber.
	15	John Perozok,	Austrian,	Laborer,	38	M.	Dorrance,		Back bruised. Struck by a prop in chamber.
	20	Andrew Pershaw,	Slavonian,	Laborer,	22	M.	Prospect,		Foot injured by fall of roof in chamber.

TABLE 5.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
July 21	Thomas R. Jones,	Welsh,	Miner,	40	S.	Hollenback No. 2,		Arm fractured by an explosion of blast in chamber.
Aug. 1	George Engel,	American,	Shaftman,	33	M.	Stanton No. 7,		Foot crushed by cage in shaft.
	John Cowely,	American,	Laborer,	24	S.	Henry,		Eye burned by flame from boilers. Outside.
8	William Ramelskie,	Polish,	Miner,	28	S.	Hillman Vein,		Face and hands burned by an explosion of gas in heading.
	Thomas Borden,	Polish,	Miner,	35	M.	Hillman Vein,		Face and hands burned by an explosion of gas in chamber.
10	Steven Macula,	Slavonian,	Miner,	26	M.	Red Ash No. 2,		Leg fractured by fall of roof in chamber.
17	John Abrams,	Polish,	Miner,	45	S.	South Wilkes-Barre No. 5,		Arm fractured by an explosion of blast in chamber.
19	Zenon Kokliniski,	Polish,	Laborer,	44	M.	Hollenback No. 2,		Arm fractured by fall of coal in heading.
22	John Stock,	Lithuanian,	Miner,	36	M.	Prospect,		Chest crushed by cars on slope.
25	Martin Kukulinski,	German,	Miner,	56	M.	Dorrance,		Ankle fractured. Struck by a rope on slope.
29	Frank Hardman,	Polish,	Doorboy,	18	S.	Hillman Vein,	Luzerne,	Scalp lacerated by cars on slope.
Sept. 5	Mike Check,	Slavonian,	Laborer,	23	S.	Dorrance,		Hand crushed by cars on slope.
8	Patrick Dougherty,	American,	Companyman,	49	M.	Hillman Vein,		Eye destroyed by rust which flew from an old rail.
	Mike Shisko,	Russian,	Laborer,	25	S.	South Wilkes-Barre No. 5,		Leg fractured by fall of roof at face of chamber.
15	James White,	American,	Patcher,	18	S.	South Wilkes-Barre No. 5,		Chest bruised by fall of roof in chamber.
20	William Larthno,	Lithuanian,	Miner,	45	M.	South Wilkes-Barre No. 5,		Leg fractured by an explosion of blast at face of chamber.
	Frank Kosloskie,	Russian,	Laborer,	34	S.	Henry,		Hand injured by cars in chamber.
25	Elmer Gruver,	American,	Runner,	21	S.	Hillman Vein,		Hand injured by fall of roof in chamber.
27	Frank Faulls,	American,	Machinist,	37	M.	South Wilkes-Barre No. 5,		Hand crushed by cars on plane.
28	Anthony Maxeika,	Lithuanian,	Miner,	28	M.	Stanton No. 7,		Leg fractured. Struck by a piece of coal in chamber.
30	Martin Ghilardi,	Italian,	Driver,	17	S.	Henry,		Arm fractured by falling. He was wrestling with another boy.
Oct. 1	Grant Fotheringdale,	American,	Timberman,	44	M.	Dorrance,		Arm lacerated by cars on slope.
2	David A. Williams,	Welsh,	Rockman,	51	M.	Prospect,		Leg fractured. Struck by a rope on plane.

Oct.	3	Severian Johnson,	Swedish,	Miner,	50	M.	Dorrance,			Foot injured. Timber rolled on him on gangway.
	4	Jonh Vischefski,	Austrian,	Runner,	19	S.	Henry,			Foot injured by machinery.
		Andrew Kricshy,	Polish,	Miner,	29	M.	Hillman Vein,			Face and hands burned by an explosion of gas in chamber.
	11	Morris Hughes,	Welsh,	Driver,	23	S.	Stanton No. 7,			Leg fractured by cars on gangway.
		Frank Zeddlofskie,	Polish,	Timberman,	40	S.	Dorrance,			Leg fractured by fall of roof on gangway.
	13	Martin Polinskie,	Lithuanian,	Miner,	33	M.	Prospect,			Leg fractured by fall of roof on gangway.
	14	Paul Soukes,	Russian,	Miner,	34	M.	Henry,			Face and hands burned by an explosion of gas in chamber.
	16	William Kriskanski,	Polish,	Miner,	41	M.	Stanton No. 7,			Head lacerated by fall of roof on gangway.
	19	Andrew Thomas,	Slavonian,	Driver,	17	S.				Arm fractured by cars on gangway.
	21	Clarence Smith,	American,	Runner,	21	S.	Hillman Vein,			Hips lacerated. Struck by a prop.
	26	Mike Szabodes,	Magyar,	Miner,	38	M.	Stanton No. 7,			Leg fractured by props in chamber.
	29	Charles Corrink,	Russian,	Laborer,	45	M.	Dorrance,			Back lacerated by fall of roof in chamber.
Nov.	3	John Dorahue,	American,	Footman,	25	M.	South Wilkes-Barre No. 5,			Leg fractured by rope striking him on gangway.
		Ignaus Olerka,	Lithuanian,	Miner,	27	S.	Stanton No. 7,			Thigh fractured by fall of roof at face of chamber.
	7	Dominick Simonitti,	Italian,	Mason,	44	M.	Henry,			Eye injured. Struck by a piece of stone while making a wall on gangway.
		Thomas Coons,	Polish,	Laborer,	48	M.	Red Ash No. 2,		Luzerne,	Finger cut off by cars. Outside.
	11	Paul Cavnings,	Polish,	Miner,	31	M.	Stanton No. 7,			Back injured by fall of coal in chamber.
	13	John Skuba,	Slavonian,	Miner,	50	M.	Red Ash No. 2,			Foot bruised by fall of coal at face of chamber.
		William Wisiniski,	Lithuanian,	Laborer,	36	M.	South Wilkes-Barre No. 5,			Face and hands burned by an explosion of gas in chamber.
	14	Joseph Maloney,	American,	Sweeper,	17	S.	Empire Washery,			Arm fractured by machinery. Outside.
	18	Peter Mpski,	Polish,	Miner,	40	M.	Stanton No. 7,			Thumb ruptured by fall of coal in chamber.
	20	William Burdules,	Lithuanian,	Miner,	40	M.	South Wilkes-Barre No. 5,			Ankle fractured by cars in chamber.
	24	Mike Spooner,	Polish,	Laborer,	21	S.	Prospect,			Thigh fractured by cars on gangway.
Dec.	5	Charles Karzenewskie	Polish,	Miner,	40	S.	Stanton No. 7,			Face and hands burned by an explosion of powder at face of chamber.
	7	Joseph Senkawicz,	Lithuanian,	Miner,	26	S.	South Wilkes-Barre No. 5,			Pelvis fractured by an explosion of blast at face of chamber.,
		Joseph Vincent,	Polish,	Miner,	52	M.	Hollenback No. 2,			Contusion of back by fall of roof in chamber.
	8	Lewis Davis,	American,	Footman,	33	M.	Stanton No. 7,			Finger crushed by cage bonnet in shaft.
	14	Valent Litvinsky,	Russian,	Miner,	31	M.	Henry,			Leg fractured by fall of roof at face of chamber.
	21	William Jones,	Welsh,	Runner,	25	S.	Hillman Vein,			Leg fractured by cars on slope.

CONDITION OF COLLIERIES

LEHIGH AND WILKES-BARRE COAL COMPANY

Hollenback No. 2, South Wilkes-Barre No. 5 and Stanton No. 7 Collieries.—Ventilation, roads, drainage and condition as to safety, good.

LEHIGH VALLEY COAL COMPANY

Dorrance, Prospect and Henry Collieries.—Ventilation, roads, drainage and condition as to safety, good.

WILKES-BARRE ANTHRACITE COAL COMPANY

Hillman Vein Colliery.—Ventilation, roads, drainage and condition as to safety, good.

RED ASH COAL COMPANY

Red Ash No. 2 Colliery.—Ventilation, drainage and roads, fair. Condition as to safety, good.

IMPROVEMENTS

LEHIGH VALLEY COAL COMPANY

Dorrance Colliery.—Completed tunnel No. 24 in the Red Ash vein and installed an electric motor for haulage on this level. No. 28 tunnel from Baltimore to Five Foot vein was started.

Outside: Completed a new steel conveyor carried on steel bents to the boiler house.

Prospect Colliery.—A 4-inch steam line was laid from the new steam bore hole to No. 5 slope engine in the Upper Baltimore, previously operated by air.

Telephone connections were extended to the head of No. 5 slope, to the foot and head of No. 4 Rock plane, and also to No. 26 slope in Skidmore vein.

A 4-inch drainage bore hole, on an 18 degree pitch, was drilled from the face of No. 9 tunnel to Midvale-Hillman vein, to assist in unwatering this mine, which was flooded by the cave under Mill Creek, December 19, 1915. Installed a Goyne pump, 12 by 18 by 18 inches, at the foot of Oakwood shaft, to pump this water to the surface, and a concrete pump-house was built for the same.

Outside: Steel bents were erected under conveyor lines. New cribbing was inserted in Prospect shaft from the surface to the rock. Renewed 700 feet of 8-inch pipe in the water lines.

An 18-inch bore hole was sunk from the surface to the Skidmore vein to handle water. A 12-inch bore hole was put down from the surface to the Upper Baltimore vein to carry steam to the engine at the head of No. 5 slope, and a 10-inch bore hole was started from the surface to this engine to be used for exhaust steam.

Two wooden flumes were constructed to divert the waters of Mill Creek from the cave, which occurred on December 12, 1915.

Blowers were installed in the boiler room.

Henry Colliery.—Completed No. 20 rock plane driven on a pitch of 10 degrees from the Top Five Foot to the Hillman vein; No. 75 tunnel, through anticlinal; rock tunnel from Top to Bottom Five Foot, and a rock skip about 200 feet long was made on the motor haulageroad near No. 11 slope. Also made concrete roof on Baltimore barn and Red Ash barn.

A fireproof overcast was constructed for the return air in Hillman vein.

Outside: Constructed fireproof engine house and installed engines therein for hoisting on No. 41 slope. A six-inch bore hole was put down for this purpose. Also constructed concrete and hollow tile wash-house and lamp-house. Fences and an overhead bridge were erected opposite the wash-house and lamp-house to prevent men from crossing the mine car tracks.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held June 6 and 7, in the Y. M. C. A. Building, Wilkes-Barre. The Board of Examiners was composed of Thomas J. Williams, Mine Inspector, Wilkes-Barre; Samuel R. Morgan, Superintendent, Wilkes-Barre; David L. John, Miner, Wilkes-Barre; John H. Harris, Miner, Wilkes-Barre.

The following persons passed a satisfactory examination and were granted certificates:

MINE FOREMEN

Daniel W. Lewis, Miners Mills; Theophilus Davis, Jenkin Evans, Plains; Thomas S. Jones, John O'Neil, John Stainthorpe, Daniel James Thomas, Wilkes-Barre.

ASSISTANT MINE FOREMEN

Emanuel Bona, Thomas Bona, Edward Evans, Harry Ellis, Evan Jones Hughes, Enoch Jones, Taliesin Rowe, Daniel R. Roderick, Thomas Sayes, Wilkes-Barre; Daniel William Davis, Kingston; Ray P. Lewis, Daniel Francis Walsh, Miners Mills; William Morris, Parsons; Robert Richards, Edwardsville.

TWELFTH DISTRICT

LUZERNE COUNTY

Wilkes-Barre, Pa., February 14, 1917.

Hon. James E. Roderick, Chief of Department of Mines.

Sir: I have the honor to transmit herewith my annual report as Inspector of Mines for the Twelfth Anthracite District, for the year ending December 31, 1916.

Respectfully submitted,

D. T. DAVIS,
Inspector.

SUMMARY OF STATISTICS

Number of collieries,	9
Number of mines,	20
Number of mines in operation,	20
Number of gaseous mines in operation,	16
Number of non-gaseous mines in operation,	4
Number of tons of coal shipped to market,	3,271,342
Number of tons used at mines for steam and heat,	333,913
Number of tons sold to local trade and used by employes,	131,410
Number of tons produced,	3,736,665
Number of persons employed inside of mines,	5,723
Number of persons employed outside,	1,604
Number of persons employed inside between 16 and 21 years,	620
Number of persons employed outside between 14 and 21 years,	339
Number of fatal accidents inside,	42
Number of fatal accidents outside,	2
Number of non-fatal accidents inside,	63
Number of non-fatal accidents outside,	4
Number of tons of coal produced per fatal accident inside,	88,968
Number of tons produced per fatal accident inside and outside,	84,924
Number of persons employed per fatal accident inside,	138
Number of persons employed per fatal accident outside,	802
Number of persons employed per fatal accident inside and outside,	130
Number of persons employed per non-fatal accident inside,	91
Number of persons employed per non-fatal accident outside,	401
Number of persons employed per non-fatal accident inside and outside,	85
Number of wives made widows,	32
Number of children made orphans,	95
Number of steam locomotives outside,	13
Number of compressed air locomotives inside,	7
Number of electric motors inside,	33
Number of tubular boilers,	169
Number of steam engines of all classes,	311

Number of electric dynamos,	9
Number of pumps of all classes,	74
Number of pumps delivering water to surface,	19
Number of air compressors,	13
Number of fans in use,	30

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Delaware and Hudson Company,	1,006,290
Delaware, Lackawanna and Western Railroad Company,	956,840
Lehigh and Wilkes-Barre Coal Company,	956,662
Kingston Coal Company,	783,788
Plymouth Red Ash Coal Company,	27,165
Shawnee Coal Company,	5,920
Total,	3,736,665

Production by Counties

Luzerne,	3,736,665

TABLE B.—Fatal and non-fatal accidents inside and outside of mines, number of tons of coal produced per accident, number of persons employed, number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Total number of employes	Number of employes inside per fatal accident	Number of employes outside per fatal accident	Number of employes inside per non-fatal accident	Number of employes outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Delaware and Hudson Co.,	8	------	8	23	------	23	125,780	43,752	1,692	520	2,212	212	-------	74	-------
Delaware, Lackawanna and Western Railroad Co.,	15	1	16	12	1	13	63,789	79,736	1,413	243	1,656	94	243	117	243
Lehigh and Wilkes-Barre Coal Co.,	13	1	14	11	------	11	73,589	86,969	1,417	451	1,868	109	451	129	-------
Kingston Coal Co.,	6	------	6	16	3	19	130,631	48,986	1,154	370	1,524	192	-------	72	123
Plymouth Red Ash Coal Co.,	------	------	------	1	------	1	----------	27,165	39	15	54	-------	-------	39	-------
Miscellaneous Companies,	------	------	------	------	------	------	----------	----------	8	5	13	-------	-------	-------	-------
Totals and averages,	42	2	44	63	4	67	88,968	59,312	5,723	1,604	7,327	138	802	91	401

TABLE C.—Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,	1		4	1	1		1						8	19.05
Falls of roof,		2	1					2		1		4	10	23.81
Mine cars,			1	2			1		1		1		6	14.29
Explosions of gas,	1	7						6		1			15	35.71
Blasts, premature and otherwise,											1	1	2	4.76
By falling,				1									1	2.38
Totals,	2	9	6	4	1		2	8	1	2	2	5	42	100.00
Outside														
Cars,			1										1	50.00
By timber,				1									1	50.00
Totals,			1	1									2	100.00
Grand totals,	2	9	7	5	1		2	8	1	2	2	5	44	

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,		2			2	3		2	2	2	3		16	25.40
Falls of roof,	2	2		1					2	1			8	12.70
Mine cars,	2				2	1	2	3	2	1		3	16	25.40
Explosions of gas,		1				1							2	3.17
Explosions of powder and dynamite,					1								1	1.59
Blasts, premature and otherwise,		1	1		1						1		4	6.35
Mules,			1										1	1.59
By falling,					2								2	3.17
Struck by rope,				1									1	1.59
Struck by piece of iron,	1	1											2	3.17
Struck by piece of coal and rock,	1	1	1		2	1	1	1	1			1	10	15.87
Totals,	6	8	3	2	10	6	3	6	7	4	4	4	63	100.00
Outside														
Cars,											1	1	2	50.00
Struck by piece of pipe,												1	1	25.00
Struck by chain,			1										1	25.00
Totals,			1								1	2	4	100.00
Grand totals,	6	8	4	2	10	6	3	6	7	4	5	6	67	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,	1	4	2	1	1			3		1	1	4	18
Miners' laborers,		3	3	1			1	2		1		1	12
Drivers and runners,	1	2	1					1	1				6
Doorboys and helpers,								1			1		2
Footmen,				1				1					2
Engineers,				1									1
Companymen,							1						1
Totals,	2	9	6	4	1		2	8	1	2	2	5	42
Outside													
Laborers,			1	1									2
Totals,			1	1									2
Grand totals,	2	9	7	5	1		2	8	1	2	2	5	44

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Assistant mine foremen,	2												2
Miners,	1	5	2	1	5	5		3	4	2	1	1	30
Miners' laborers,	1	2			2		1	2	2	2	3		15
Drivers and runners,	2		1		1		1						5
Motormen and assistants,						1							1
Companymen,					2		1					2	5
Footmen,		1		1				1	1			1	5
Totals,	6	8	3	2	10	6	3	6	7	4	4	4	63
Outside													
Runners,												1	1
Headmen,											1		1
Laborers,			1									1	2
Totals,			1								1	2	4
Grand totals,	6	8	4	2	10	6	3	6	7	4	5	6	67

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	1	2	1				1	3	1	1			10
English,			1										1
Welsh,				1									1
Irish,												1	1
Polish,	1	5	2	2			1	3			2	2	18
Slavonian,				1	1								2
Lithuanian,		1						2		1		1	5
Austrian,				1									1
Russian,		1	3									1	5
Totals,	2	9	7	5	1		2	8	1	2	2	5	44

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	1	2	1	1	5	2	2	1	3		2	3	23
English,	1		1							1			3
Welsh,	1	1			2	1		1		1		1	8
Irish,					1								1
German,				1									1
Polish,	3	2	1		1	2			1	1	1	1	13
Slavonian,		1	1		1			3				1	7
Lithuanian,		2				1			1		1		5
Austrian,									1		1		2
Russian,							1	1					2
Greek,									1	1			2
Totals,	6	8	4	2	10	6	3	6	7	4	5	6	67

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening: Shaft — Depth	Kind of Opening: Slope (Coal or Rock) — Length	Kind of Opening: Slope (Coal or Rock) — Average pitch—degrees	Kind of Opening: Drift	Gaseous or non-gaseous	Number and Types of Safety Lamps Used: Flame	Number and Types of Safety Lamps Used: Electric
Delaware and Hudson Co. Plymouth No. 3 Colliery:										
Plymouth No. 2,	Luzerne,	L or Primrose,	48	600				Gaseous,	40	
		K or Snake Island,	72	898						
		J or Abbott,	72						20	
		I or Lance,	84							
		H or Hillman,	96							
		G or Stanton,	54							
		F or Five Foot,	60							
		E or Cooper,	84							
		E or Bennett,	144							
		B or Upper Red Ash	96							
		B or Bottom Red Ash	144							
Plymouth No. 3,	Luzerne,	J or Abbott,	84					Gaseous,	80	
		I or Lance,	84	752					25	
		H or Hillman,	96							
		G or Stanton,	42							
		F or Five Foot,	60							
		E or Cooper,	96							
		E or Bennett,	144							
		C or Ross,	28							
		B or Top Red Ash,	108							
		B or Bottom Red Ash	168							

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and Types of Safety Lamps Used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Plymouth No. 5 Colliery:										
Plymouth No. 4,	Luzerne,	E or Cooper,	96	365				Gaseous,		
		E or Bennett,	144						12	
		C or Top Ross,	36							
		C or Bottom Ross,	84						10	
		B or Top Red Ash,	96							
		B or Bottom Red Ash	156							
Plymouth No. 5,	Luzerne,	F or Five Foot,	60	703				Gaseous,		
		E or Cooper,	84						15	
		E or Bennett,	144							
		C or Top Ross,							8	
		C or Bottom Ross,	28							
		B or Top Red Ash,	84							
		B or Bottom Red Ash	144							
Boston,	Luzerne,	F or Five Foot,	60							
		E or Cooper,	96	453				Gaseous,		
		E or Bennett,	144	425				Gaseous,		
		C or Top Ross,	28						12	
		C or Bottom Ross,	28						10	
		B or Bottom Red Ash	144					Gaseous,		
		B or Top Red Ash,	144							

Delaware, Lackawanna and Western Railroad Co.									
Woodward Colliery:									
Woodward,	Luzerne,	I or Abbott,			1,500	15	Gaseous,		
		I or Kidney,					Gaseous,		
		H or Hillman,					Gaseous,		
		F or Five Foot,					Gaseous,		
		F or Lance,					Gaseous,	1,501	
		E or Cooper,							
		E or Bennett,							
		E or Baltimore,							
		B or Top Red Ash,							
		B or Bottom Red Ash		1,037					
Lehigh and Wilkes-Barre Coal Co.									
Lance No. 11 Colliery:									
Lance,	Luzerne,	I or Kidney,	72	517			Gaseous,	288	
		H or Hillman,	84				Gaseous,		
		G or Stanton,	48				Gaseous,		
		F or Five Foot,	54				Gaseous,		
		E or Cooper,	60						
		E or Baltimore,	84						
		C or Ross,	66						
		B or Top Red Ash,	72						
		B or Bottom Red Ash	120						
Nottingham No. 15 Colliery:									
Number 15,	Luzerne,	C or Ross,	72	365			Gaseous,	274	
Reynolds,	Luzerne,	E or Baltimore,	84		220	20	Gaseous,		
		B or Bottom Red Ash	198						
Kingston Coal Co.									
Kingston No. 2 Colliery:									
Number 2,	Luzerne,	F or Lance,	54				Gaseous,	10	10
		E or Cooper,	60						
		E or Bennett,	108	290					
Number 3,	Luzerne,	G or Orchard,	48				Gaseous,	10	10
		C or Ross,	30						
		C or Ross,	96	538					
		B or Red Ash,	120						
Slope,	Luzerne,	E or Bennett,	108				Non-gas.,	5	5
		C or Ross,	30		750	15	430		
		C or Ross,	96						
		B or Red Ash,	120						

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and Types of Safety Lamps Used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Gaylord Colliery:										
		B or Red Ash,	324	559	330	25		Non-gas.,	4	25
		C or Ross,	76							
		F or Checker,	36							
Gaylord,	Luzerne,	E or Bennett,	96							
		E or Cooper,	132							
		F or Lance,	60							
		G or Orchard,	101							
Plymouth Red Ash Coal Co. Plymouth Red Ash Colliery: Red Ash,	Luzerne,	B or Red Ash,	264		350	7.5		Non-gas.,		
Shawnee Coal Co. Shawnee Colliery: Shawnee,	Luzerne,	F or Five Foot,	72		230	12		Non-gas.,		

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Delaware and Hudson Co. Plymouth No. 3 Colliery:												
Plymouth No. 2,	Luzerne,	L or Primrose,	Guibal,	28	70	3.4	Steam,	324,000	289,000	378,000	20	
		K or Snake Island,	Vulcan,	10	98	2						
		J or Abbott,	Vulcan,	10	132	1.9						
		I or Lance,	Guibal,	22	80	2.1						
		H or Hillman,										
		G or Stanton,										
		F or Five Foot,										
		E or Cooper,										
		E or Bennett,										
		B or Upper Red Ash										
		B or Bottom Red Ash										
Plymouth No. 3,	Luzerne,	J or Abbott,	Vulcan,	12	163	3.2	Steam,	262,000	216,000	296,000	18	
		I or Lance,	Vulcan,	7	133	.5						
		H or Hillman,	Guibal,	17	80	1.1						
		G or Stanton,										
		F or Five Foot,										
		E or Cooper,										
		E or Bennett,										
		C or Ross,										
		B or Top Red Ash,										
		B or Bottom Red Ash										

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Plymouth No. 5 Colliery:												
Plymouth No. 4,	Luzerne,	E or Cooper, E or Bennett, C or Top Ross, C or Bottom Ross, B or Top Red Ash, B or Bottom Red Ash	Guibal,	17	115	1	Steam,	87,000	70,000	96,000	6	
Plymouth No. 5,	Luzerne,	F or Five Foot, E or Cooper, E or Bennett, C or Top Ross, C or Bottom Ross, B or Top Red Ash, B or Bottom Red Ash	Guibal	22	8	2.3	Steam,	157,000	146,000	176,000		
Boston,	Luzerne,	F or Five Foot, E or Cooper, E or Bennett, C or Top Ross, C or Bottom Ross, B or Bottom Red Ash B or Top Red Ash,	Guibal,	22	80	2	Steam,	180,000	160,000	214,000	12	

Delaware, Lackawanna and Western Railroad Co.												
Woodward Colliery:												
		J or Abbott,	D. L. and W.,	16	72	1						
		I or Kidney,	Dickson,	35	49	2	Steam,	58,000	51,500	64,300	5	99
		H or Hillman,	Dickson,	20	100	1.5						
		F or Fife Foot,	Jeffrey,	20	78	3						
Woodward,	Luzerne,	F or Lance,	Jeffrey,	20	81	3	Steam,	724,450	634,800	837,240	42	1,314
		E or Cooper,	Jeffrey,	20	70	2.3	Electricity,					
		E or Bennett,	Jeffrey,	20	70	2.3						
		E or Baltimore,										
		B or Top Red Ash,										
		B or Bottom Red Ash										
Lehigh and Wilkes-Barre Coal Co.												
Lance No. 11 Colliery:												
		I or Kidney,										
		H or Hillman,										
		G or Stanton,	Guibal,	34.5	50	1.9						
		F or Five Foot,	Guibal,	35	49	1.9	Steam,	285,335	360,958	200,499	14	358
Lance,	Luzerne,	E or Cooper,	Guibal,	35	49	2.1						
		E or Baltimore,										
		C or Ross,										
		B or Top Red Ash,										
		B or Bottom Red Ash										
Nottingham No. 15 Colliery:												
		C or Ross,	Guibal,	24	69	2	Steam,					
		E or Baltimore,	Guibal,	24	69	2	Steam,					
Number 15,	Luzerne,	B or Bottom Red Ash	Guibal,	24	69	2	Steam,					
Reynolds,	Luzerne,		Guibal,	24	70	1.9	Steam,	463,204	452,833	273,236	21	486
			Guibal,	24	73	2	Steam,					
			Guibal,	23.7	56	1.1	Steam,					
			Sturtevant,	5	425	.1	Electricity,					
Kingston Coal Co.												
Kingston No. 2 Colliery:												
		F or Lance,										
Number 2,	Luzerne,	E or Cooper,	Guibal,	25	70	1.3	Steam,	114,950	123,300	103,250	6	286
		E or Bennett,										
		G or Orchard,										
Number 3,	Luzerne,	C or Ross,	Guibal,	21	75	1.5	Steam,	109,450	126,480	87,000	6	313
		C or Ross,										
		B or Red Ash,										
		E or Bennett,										
Slope,	Luzerne,	C or Ross,	Guibal,	25	60	1	Steam,	108,650	116,300	97,865	6	252
		C or Ross,										
		B or Red Ash,										

TABLE I—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Gaylord Colliery:												
Gaylord,	Luzerne,	B or Red Ash, C or Ross, F or Checker, E or Bennett, E or Cooper, F or Lance, G or Orchard,	Guibal,	25	60	1.1	Steam,	102,100	78,800	65,000	7	304
Plymouth Red Ash Coal Co.												
Plymouth Red Ash Colliery:												
Red Ash,	Luzerne,	B or Red Ash,					Natural,	64,400	68,700	46,500	4	31
Shawnee Coal Co.												
Shawnee Colliery:												
Shawnee,	Luzerne,	F or Five Foot,					Natural,	3,240	3,000	2,500	1	8

TABLE 1.—Operators, location of collieries, railroads, etc.

Names Operators and Collieries	County	General Superintendent	Post Office	Superintendent	Post Office	Railroad to Mine
Delaware and Hudson Co. Plymouth No. 3, Plymouth No. 5, Plymouth No. 3 Washery, Plymouth No. 5 Washery,	Luzerne,	Cadwalder Evans, Jr.	Scranton,	Thomas Stoneham,	Plymouth,	Delaware and Hudson
Delaware, Lackawanna and Western Railroad Co. Woodward,	Luzerne,	William W. Inglis,	Scranton,	R. P. Thomas,	Kingston,	D. L. and W.
Lehigh and Wilkes-Barre Coal Co. Lance No. 11, Nottingham No. 15,	Luzerne,	C. F. Huber,	Wilkes-Barre,	E. J. Newbaker,	Wilkes-Barre,	C. R. R. of N. J.
Kingston Coal Co. Kingston No. 2,	Luzerne,	F. E. Zerbey,	Kingston,	Thomas H. Williams,	Edwardsville,	D. and H., Penna., D. L. and W., and C. R. R. of N. J., L. V.
Gaylord,				Ralph A. Smith,	Plymouth,	D. and H., Penna., D. L. and W., C. R. R. of N. J.
Plymouth Red Ash Coal Co. Plymouth Red Ash,	Luzerne,	W. L. Schlager,	Scranton,			D. L. and W.
Shawnee Coal Co. Shawnee,	Luzerne,	Frank Lewis,	Plymouth,			None

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives: Pounds of black powder used	Explosives: Pounds of dynamite used	Explosives: Pounds of permissible explosives used
Delaware and Hudson Co.												
Plymouth No. 3,	Luzerne,	363,731	4,194	5,731	373,656	224	1,224	2	5	326,325	17,230	343,555
Plymouth No. 5,	Luzerne,	437,951	28,944	5,533	472,428	262	988	6	18	278,150	10,734	288,884
	Luzerne,	801,682	33,138	11,264	846,084	------	2,212	8	23	604,475	27,964	632,439
Washeries												
Plymouth No. 3,	Luzerne,	38,965	82,477	----------	121,442	144	*					
Plymouth No. 5,	Luzerne,	3,217	35,547	----------	38,764	*	*					
		42,182	118,024	----------	160,206	------						
Totals,		843,864	151,162	11,264	1,006,290	------	2,212	8	23	604,475	27,964	632,439
Delaware, Lackawanna and Western Railroad Co.												
Woodward,	Luzerne,	908,420	40,170	8,250	956,840	267	1,656	16	13	651,650	22,522	177,800
Lehigh and Wilkes-Barre Coal Co.												
Lance No. 11,	Luzerne,	330,821	32,892	4,399	368,112	251	724	9	1	267,100	4,056	18,825
Nottingham No. 15,	Luzerne,	504,813	65,593	18,144	588,550	250	1,144	5	10	264,700	8,399	2,411
Totals,		835,634	98,485	22,543	956,662	------	1,868	14	11	531,800	12,455	21,236

*Included with colliery.

Kingston Coal Co.															
Kingston No. 2,	Luzerne,	493,315	24,000	65,851	583,166	287	1,124	5	14	450,450	5,500	4,300
Gaylord,		165,038	20,000	15,584	200,622	2.8	400	1	5	70,000	12,100	
Totals,		658,353	44,000	81,435	783,788		1,524	6	19	520,450	17,600	4,300
Plymouth Red Ash Coal Co.												
Plymouth Red Ash,	Luzerne,	21,550	96	5,519	27,165	256	54		1	5,000	125	5,500
Shawnee Coal Co.												
Shawnee,	Luzerne,	3,521		2,399	5,920	221	13			3,750	150	
Grand totals,		3,271,342	333,913	131,410	3,736,665		7,327	44	67	2,317,125	80,816	841,275

TABLE 2.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Names of Operators	County	Power Plant: Boilers: Cylindrical: Number	Power Plant: Boilers: Cylindrical: Total horse power	Power Plant: Boilers: Tubular: Number	Power Plant: Boilers: Tubular: Total horse power	Power Plant: Engines: Steam Engines (All Classes): Number	Power Plant: Engines: Steam Engines (All Classes): Total horse power	Power Plant: Engines: Internal Combustion Engines (Gas): Number	Power Plant: Engines: Internal Combustion Engines (Gas): Total horse power	Power Plant: Engines: Electric Dynamos (All Classes): Number	Power Plant: Engines: Electric Dynamos (All Classes): Total kilowatts	Pumps: Number	Pumps: Total capacity in gallons per minute	Pumps: Pumps Delivering Water to the Surface: Number	Pumps: Pumps Delivering Water to the Surface: Approximate number of gallons per minute	Haulage: Number of horses and mules	Haulage: Locomotives: Gasoline	Haulage: Locomotives: Steam	Haulage: Locomotives: Air	Haulage: Locomotives: Electric	Air Compressors: Number	Air Compressors: Total capacity in cubic feet per minute
Delaware and Hudson Co.,	Luzerne,			120	9,690	133	9,834					10	17,000	10	3,980	248		2			6	
Delaware, Lackawanna and Western Railroad Co.,				11	2,909	36	6,342			6	2,300	17	10,750	2	3,000	118		1		25		
Lehigh and Wilkes-Barre Coal Co.,				24	5,550	103	10,630					37	20,235	6	4,695	270		3	7		5	13,380
Kingston Coal Co.,				13	3,450	39	4,750			1	175	9	3,425	1	1,000	153		7		7	2	2,550
Plymouth Red Ash Coal Co.,				1	50					2	128					4						
Shawnee Coal Co.,												1								1		
Totals,				169	21,649	311	31,556			9	2,603	74	51,410	19	12,675	793		13	7	33	13	15,930

TABLE 3.—Part 1.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside															Total inside	Outside										Total outside	Grand total inside and outside
		Mine foremen	Assistant mine foremen	Fire bosses	Miners	Miners' laborers	Machine miners	Machine runners and scrapers	Drivers and runners	Motormen and assistants	Doorboys and helpers	Trackmen and bratticemen	Timbermen and rockmen	Pumpmen and pipemen	Electricians and helpers	All other employes		Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Machinists and helpers	Trackmen and helpers	Slate pickers (boys)	Slate pickers (men)	Office employes	All other employes			
Delaware and Hudson Co.,	Luzerne,	4	10	18	492	566	----	----	217	----	62	58	16	17	2	230	1,692	----	7	23	112	8	----	25	71	4	270	520	2,212
Delaware, Lackawanna and Western Railroad Co.,		4	28	----	564	349	----	----	89	53	36	49	23	10	9	199	1,413	1	2	21	30	3	----	44	----	3	139	243	1,656
Lehigh and Wilkes-Barre Coal Co.,		3	3	32	506	300	----	----	160	16	83	49	35	24	----	206	1,417	----	2	16	65	1	2	67	7	8	283	451	1,868
Kingston Coal Co.,		5	17	5	519	282	----	----	111	16	9	40	59	10	3	78	1,154	2	3	44	46	11	7	3	30	5	219	370	1,524
Plymouth Red Ash Coal Co.,		1	1	----	12	16	----	----	4	----	----	1	----	1	----	3	39	1	1	1	2	----	----	1	----	2	7	15	54
Shawnee Coal Co.,		----	----	----	4	4	----	----	----	----	----	----	----	----	----	----	8	1	----	----	1	----	----	1	1	----	1	5	13
Totals,		17	59	55	2,097	1,517	----	----	581	85	190	197	133	62	14	716	5,725	5	15	105	256	23	9	141	109	22	919	1,604	7,327

TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Totals
Delaware and Hudson Co.,	Luzerne,	25	24	16	21	22	18	21	21	20	23	21	23	255
Delaware, Lackawanna and Western Railroad Co.,		20	20	24	11	23	22	25	25	25	25	24	23	267
Lehigh and Wilkes-Barre Coal Co.,		19	17	15	15	25	18	23	25	24	24	23	23	251
Kingston Coal Co.,		22	22	25	19	26	23	23	26	25	25	24	23	283
Plymouth Red Ash Coal Co.,		22	24	26	21	19	10	15	24	24	23	25	23	256
Shawnee Coal Co.,		22	21	21	18	21	20	6	14	19	20	23	16	221

TABLE 4.—Fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 5	Charles Reskoskie,	Polish,	Miner,	47	M.	1	8	Gaylord,		Killed by an explosion of gas at face of chamber.
17	Charles Tomecko,	American,	Driver,	18	S.			Plymouth No. 3,		Fatally injured by fall of coal on gangway.
Feb. 1	John Donaldson,	Polish,	Miner,	51	M.	1	6	Kingston No. 2,		Killed by fall of roof in chamber.
8	Vitold Muendowski,	American,	Driver,	19	S.			Lance No. 11,		Killed by an explosion of gas on slope. A description of this accident is given in preliminary part of this report.
	George Korkie,	American,	Runner,	22	M.	1				
	Michael Michalonis,	Lithuanian,	Miner,	49	M.	1	8			
	Stanley Karshala,	Polish,	Laborer,	21	M.	1				
	Walter Balesta,	Polish,	Laborer,	23	S.					
	Stanley Szusfika,	Polish,	Miner,	33	M.	1	3			
	John Lasoski,	Polish,	Miner,	24	M.	1				
28	John Veroria,	Russian,	Laborer,	26	M.	1	5	Kingston No. 2,		Killed by fall of roof at face of chamber.
Mar. 1	Alex Supus,	Russian,	Laborer,	24	S.			Woodward,		Killed by cars. Outside.
3	George Heckebs,	English,	Laborer,	69	M.	1		Plymouth No. 3,		Fatally injured by fall of roof at face of chamber.
	Andrew Wonsavage,	Polish,	Miner,	45	M.	1	4	Plymouth No. 5,	Luzerne,	Killed by fall of coal at face of chamber.
	William Filipezuk,	Russian,	Laborer,	22	S.			Woodward,		Killed by fall of coal at face of chamber.
	Frank Bitka,	Russian,	Laborer,	26	M.	1	2	Woodward,		Killed by fall of coal at face of chamber.
28	Peter Novak,	Polish,	Miner,	51	M.	1		Nottingham No. 15,		Killed by fall of coal at face of chamber.
29	Edison Jones,	American,	Runner,	20	S.			Woodward,		Killed by cars on gangway.
April 5	John Fedor,	Slavonian,	Miner,	30	M.	1		Plymouth No. 5,		Fatally injured by fall of coal in chamber.
8	Anthony Rydvenskie,	Polish,	Laborer,	29	M.	1	2	Nottingham No. 15,		Killed by falling when scaffold broke on gangway.
12	Philyo Myrgo,	Austrian,	Laborer,	53	M.	1	5	Nottingham No. 15,		Killed by timber falling on him. Outside.
17	Julius Trosky,	Polish,	Footman,	22	S.			Woodward,		Killed by cars on gangway.
26	David Evans,	Welsh,	Engineer,	73	M.	1		Nottingham No. 15,		Fatally injured by cars on gangway.
May 25	John Bendick,	Slavonian,	Miner,	32	M.	1	4	Kingston No. 2,		Killed by fall of coal at face of chamber.
July 13	Joseph Bigga,	Polish,	Laborer,	48	M.	1	6	Woodward,		Killed by fall of coal in chamber.
26	Thomas Bowden,	American,	Companyman,	63	M.	1	2	Plymouth No. 5,		Killed by cars on gangway.
Aug. 4	John Buckler,	Lithuanian,	Laborer,	54	M.	1	2	Nottingham No. 15,		Killed by fall of roof at face of chamber.

TABLE 4.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Aug. 7	John Shunky,	American,	Miner,	52	M.	1	4	Plymouth No. 5,		Killed by fall of roof in chamber.
8	Ernest Hilton,	American,	Footman,	27	S.			Woodward,		Killed by an explosion of gas on gangway. A description of this accident is given in preliminary part of this report.
	John Litwok,	Polish,	Doortender,	16	S.					
	Joseph Globoski,	Polish,	Runner,	33	M.	1	4			
	Stanley Puzia,	Polish,	Miner,	39	M.	1	6			
	Frank Yeman,	Lithuanian,	Laborer,	37	M.	1				
	Benjamin Williams,	American,	Miner,	26	S.					
Sept. 1	Timothy O'Connell,	American,	Driver,	32	M.	1	1	Kingston No. 2,		Killed by cars on gangway.
Oct. 4	John Marcavage,	Lithuanian,	Laborer,	46	S.			Lance No. 11,		Fatally burned by an explosion of gas in chamber.
11	John Bartaszewicz,	American,	Miner,	30	S.			Plymouth No. 5,	Luzerne,	Killed by fall of roof at face of chamber.
Nov. 11	Stanley Gervitus,	Polish,	Miner,	50	M.	1	2	Woodward,		Fatally injured by an explosion of blast at face of chamber.
25	Michael Sudoski,	Polish,	Doortender,	74	M.	1		Plymouth No. 5,		Killed by cars on gangway.
Dec. 6	Joseph Fisher,	Russian,	Miner,	46	M.	1	6	Lance No. 11,		Killed by fall of roof at face of chamber.
13	George Ruthasky,	Lithuanian,	Miner,	45	M.	1	7	Woodward,		Killed by fall of roof at face of chamber.
	Barney Gwilski,	Polish,	Laborer,	41	M.	1	3	Woodward,		Killed by fall of roof at face of chamber.
21	Patrick Conahan,	Irish,	Miner,	42	M.	1	5	Kingston No. 2,		Killed by fall of roof at face of chamber.
27	John Miedzieyke,	Polish,	Miner,	49	M.	1		Woodward,		Killed by an explosion of blast at face of chamber.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 4	William Arthur,	Welsh,	Asst. foreman,	43	S.	Nottingham No. 15,	Luzerne,	Ankle fractured by coal rolling on him in chamber.
5	Arthur Caswell,	English,	Asst. foreman,	53	M.	Plymouth No. 5,		Head injured by fall of roof on gangway.
8	Joseph Reychonski,	Polish,	Miner,	29	M.	Plymouth No. 5,		Toe fractured by iron falling on him on gangway.
24	Stanley Gregory,	American,	Driver,	18	S.	Plymouth No. 5,		Hand crushed by cars on gangway.
	Frank Barzenskie,	Polish,	Driver,	18	S.	Nottingham No. 15,		Thigh fractured by cars on gangway.
25	Joseph Novak,	Polish,	Laborer,	27	M.	Kingston No. 2,		Contusion of back by fall of roof at face of chamber.
Feb. 2	John Jones,	Welsh,	Miner,	57	M.	Woodward,		Cheek punctured by an explosion of blast in chamber.
4	Benjamin Kosnoski,	American,	Footman,	19	S.	Plymouth No. 5,		Arm punctured by coal falling down shaft.
5	John Zipsay,	Slavonian,	Laborer,	37	M.	Plymouth No. 5,		Wrist fractured. Struck by an iron drill.
8	John Sulbanski,	Lithuanian,	Laborer,	20	S.	Lance No. 11,		Skull fractured by an explosion of gas on slope.
19	Anthony Seervoitz,	Polish,	Miner,	34	M.	Kingston No. 2,		Pelvis and knee fractured by fall of roof on gangway.
21	Albert Mensinger,	American,	Miner,	39	M.	Kingston No. 2,		Knee fractured by fall of coal on gangway.
23	Walshko Vilk,	Polish,	Miner,	50	M.	Kingston No. 2,		Foot fractured by fall of roof in chamber.
29	Michael Waleedus,	Lithuanian,	Miner,	43	M.	Woodward,		Knee fractured by fall of coal at face of chamber.
Mar. 8	Peter Kusma,	Polish,	Laborer,	38	S.	Woodward,		Shoulder dislocated. Struck by a chain. Outside.
	Frank Hilliard,	American,	Driver,	22	S.	Nottingham No. 15,		Finger fractured. Kicked by a mule.
11	Peter Tomashua,	Slavonian,	Miner,	33	M.	Kingston No. 2,		Eye injured by a flying piece of coal in chamber.
18	Joseph Carpenter,	English,	Miner,	40	M.	Kingston No. 2,		Injured about body by an explosion of blast in chamber.
April 20	John Eley,	American,	Footman,	25	M.	Plymouth Red Ash,		Leg fractured. Struck by a rope on slope.
	Joseph Stawzee,	German,	Miner,	31	M.	Plymouth No. 5,		Leg fractured by fall of roof at face of chamber.
May 1	Edward Redenski,	American,	Laborer,	22	S.	Plymouth No. 5,		Killed by fall of coal at face of chamber.
4	Michael Sochacki,	Polish,	Laborer,	24	S.	Plymouth No. 5,		Ankle fractured. Struck by coal that rolled down chute.

TABLE 5.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
May 5	Juistis Steele,	American,	Miner,	56	M.	Plymouth No. 5,		Ankle dislocated by falling down chamber.
7	Albert Beeche,	American,	Companyman,	23	M.	Woodward,		Groin sprained by cars on gangway.
8	James Lyons,	American,	Driver,	71	M.	Kingston No. 2,		Wrist fractured by falling on gangway.
11	Thomas Reese,	Welsh,	Miner,	47	M.	Kingston No. 2,		Toe fractured by coal rolling on him.
20	Lawrence Connell,	Irish,	Miner,	30	S.	Plymouth No. 3,		Internally injured by fall of coal at face of chamber.
23	Charles Yudicka,	Slavonian,	Miner,	29	M.	Plymouth No. 3,		Leg fractured by an explosion of blast at face of chamber.
25	Elias Owens,	Welsh,	Miner,	37	M.	Woodward,		Severely burned by an explosion of powder in chamber.
27	Hugh Sheridan,	American,	Companyman,	50	S.	Plymouth No. 3,		Leg fractured by cars on gangway.
June 8	John Pierson,	American,	Miner,	64	M.	Plymouth No. 5,		Leg fractured by fall of coal at face of chamber.
15	Wasel Dargle,	Polish,	Miner,	43	S.	Nottingham No. 15,		Face and hands burned by an explosion of gas at face of chamber.
16	Herbert Munday,	American,	Motorman,	33	S.	Gaylord,		Pelvis fractured by cars on gangway.
18	Stanley Dzick,	Polish,	Miner,	44	M.	Nottingham No. 15,	Luzerne,	Body bruised by fall of coal in chamber.
26	John Johns,	Welsh,	Miner,	54	M.	Nottingham No. 15,		Head lacerated by a flying piece of rock on gangway.
27	Frank Smith,	Lithuanian,	Miner,	52	M.	Nottingham No. 15,		Scalp lacerated by fall of coal at face of chamber.
July 20	Joseph Karolchynk,	Russian,	Laborer,	26	S.	Gaylord,		Foot bruised by coal rolling on it in chamber.
25	Ernest Doughtn,	American,	Companyman,	25	S.	Woodward,		Thigh fractured by cars on gangway.
28	Jacob Tansaw,	American,	Driver,	18	S.	Kingston No. 2,		Leg fractured by cars on gangway.
Aug. 5	Stephen Osack,	Slavonian,	Miner,	46	M.	Kingston No. 2,		Ankle fractured by a piece of coal rolling on him in chamber.
6	Joseph Richards,	Slavonian,	Miner,	33	M.	Gaylord,		Ribs fractured by cars on gangway.
9	Andrew Saturday,	Russian,	Laborer,	38	M.	Nottingham No. 15,		Leg fractured by fall of coal at face of chamber.
22	Joseph Kusher,	American,	Miner,	52	M.	Plymouth No. 5,		Head lacerated by fall of coal at face of chamber.
28	Thomas Evans,	Welsh,	Laborer,	40	M.	Plymouth No. 3,		Ankle fractured by cars on gangway.
29	Stephen Istvan,	Slavonian,	Footman,	27	M.	Kingston No. 2,		Thigh fractured by cars on gangway.

Sept	5	John Matiski,	American,	Miner,	24	M.	Kingston No. 2,	Luzerne,	Foot lacerated by fall of coal at face of chamber.
	6	Martin Kzrican,	Polish,	Miner,	30	S.	Plymouth No. 3,		Back bruised by fall of roof at face of chamber.
	13	Thomas Hines,	American,	Footman,	38	S.	Woodward,		Hand lacerated by cars on gangway.
		David Warmouth,	American,	Laborer,	26	S.	Plymouth No. 5,		Hip dislocated by fall of roof at face of chamber.
	14	George Bepus,	Greek,	Miner,	38	M.	Nottingham No. 15,		Leg fractured by cars at face of chamber.
	16	Frank Smith,	Lithuanian,	Miner,	51	M.	Nottingham No. 15,		Collar bone fractured by fall of coal at face of chamber.
		John Hutnick,	Austrian,	Laborer,	30	M.	Woodward,		Leg fractured by a flying piece of coal in chamber.
Oct.	12	Anthony Swicken,	Russian,	Laborer,	50	M.	Plymouth No. 5,		Head lacerated by fall of coal at face of chamber.
	21	George Lubbock,	English,	Miner,	52	M.	Gaylord,		Rib fractured by fall of roof at face of chamber.
	25	James Isaacs,	Welsh,	Miner,	47	M.	Woodward,		Ankle fractured by fall of coal in cross cut.
	26	John Pilsa,	Polish,	Laborer,	32	M.	Woodward,		Collar bone fractured by cars in chamber.
Nov.	3	Michael Tuzkosky,	Lithuanian,	Laborer,	37	M.	Plymouth No. 5,		Eye injured by fall of coal at face of chamber.
	11	Casper Coshic,	Polish,	Laborer,	39	M.	Woodward,		Eyes destroyed by an explosion of blast at face of chamber.
	15	Edward Martin,	American,	Headman,	26	S.	Kingston No. 2,		Toe fractured by cars. Outside.
	20	John Blaskoo,	Austrian,	Laborer,	18	S.	Plymouth No. 5,		Hip dislocated by fall of coal at face of chamber.
		Michael Spuchanck,	American,	Miner,	54	M.	Plymouth No. 5,		Pelvis fractured by fall of coal at face of chamber.
Dec.	9	Evan Thomas,	Welsh,	Companyman,	33	M.	Woodward,		Hand fractured by cars on gangway.
	14	Peter Gallagher,	American,	Companyman,	19	S.	Plymouth No. 5,		Collar bone fractured by cars on plane.
		Benjamin Kosnosky,	American,	Footman,	19	S.	Plymouth No. 5,		Fingers lacerated by cars at foot of slope.
	18	George Hopko,	Slavonian,	Runner,	40	M.	Kingston No. 2,		Hand crushed by car. Outside.
	20	John Jones,	American,	Laborer,	34	M.	Gaylord,		Arm fractured while handling pipes. Outside.
		Martin Zawatski,	Polish,	Miner,	32	S.	Woodward,		Leg punctured by a flying piece of coal.

CONDITION OF COLLIERIES

DELAWARE AND HUDSON COMPANY

Plymouth Nos. 3 and 5 Collieries.—Safety conditions, ventilation and drainage, good.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Woodward Colliery.—Safety conditions, ventilation and drainage, good.

LEHIGH AND WILKES-BARRE COAL COMPANY

Lance No. 11 and Nottingham No. 15 Collieries.—Safety conditions, ventilation and drainage, good.

KINGSTON COAL COMPANY

Kingston No. 2 and Gaylord Collieries.—Safety conditions, ventilation and drainage, good.

PLYMOUTH RED ASH COAL COMPANY

Plymouth Red Ash Colliery.—Safety conditions, ventilation and drainage, good.

SHAWNEE COAL COMPANY

Shawnee Colliery.—Safety conditions, ventilation and drainage, good.

IMPROVEMENTS

DELAWARE AND HUDSON COMPANY

Plymouth No. 3 Colliery.—Completed a tunnel and return airway, 150 feet long, through fault in the Stanton vein. The shaft landing in the Five Foot bed was secured by concrete walls and steel beams.

On December 2, 1916, the breaker was completely destroyed by fire, and the coal from this opening is being prepared at Plymouth No. 5 breaker.

In No. 3 shaft, a tunnel 150 feet long and a return airway 40 feet long were completed from the Top Red Ash to Ross vein. A tunnel from the Stanton to the Five Foot bed was driven 200 feet.

Pdymouth No. 5 Colliery.—A tunnel 290 feet long and a return airway 80 feet long were driven from the Bottom to the Top Red Ash. Four tunnels, averaging 120 feet in length, were driven from the Top Red Ash to the Three Foot bed.

Installed a 2,000 G. P. M. pump to pump from Bottom Red Ash to surface.

The mouth of No. 1 tunnel was secured by concrete walls and steel beams.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Woodward Colliery.—Completed a rock tunnel for haulage from the Lance to the Five Foot vein; distance 654 feet. Ventilation tun-

nel was driven from Cooper to Lance vein; distance 100 feet. Built 250 feet of concrete walls and steel I beams for roof and side supports on Cooper vein haulage road, and 300 feet on Baltimore haulage road, No. 3 shaft.

Installed two electric locomotives, one in Hillman vein, No. 2 shaft, and one in Baltimore vein, No. 3 shaft.

Outside: Installed one generator set, switchboard, etc., complete. Erected new steam lines from steam plant to the several hoisting engines.

LEHIGH AND WILKES-BARRE COAL COMPANY

Lance No. 11 Colliery.—Extended No. 8 slope, Cooper to Baltimore; No. 31 slope, Baltimore to Cooper; rock plane airway, Bottom to Top Red Ash; No. 22 plane, Stanton to Hillman; and rock plane airway, Hillman to Kidney vein.

Nottingham No. 15 Colliery.—Completed No. 7 tunnel, Ross to Ross vein.

KINGSTON COAL COMPANY

Kingston No. 2 Colliery.—Drove a new traveling way and airway in Cooper vein through culm-filled district and connected with Lance vein tunnel. Two short tunnels were driven from Cooper to Bennett vein.

In No. 3 shaft, a second opening was made from East Red Ash to the Ross tunnel on the west side. Forty-six shafts were driven from Ross to Ross Split vein. Completed a short tunnel through roll from Eleven Foot vein to Eleven Foot vein.

In the slope, a 2-inch bore hole was drilled from Eleven Foot to Ross vein, for drainage.

Installed a 5-ton Jeffrey storage battery locomotive in lower lifts of Ross and Red Ash veins.

Outside: A concrete and steel foot-bridge has been erected over main tracks, with concrete and steel passageways, foot-paths, fences, etc., for the safety of employes.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in the High School Building, Plymouth, June 6 and 7. The Board of Examiners was composed of D. T. Davis, Mine Inspector; Harry G. Davis, Superintendent, Kingston; William H. Chappell, Miner, Plymouth, and Lewis R. Thomas, Miner, Edwardsville.

The following persons passed a satisfactory examination and were granted certificates:

MINE FOREMEN

Philip Callender, Daniel R. Edmunds, David T. Morgan, Frank B. Davenport, Clarence E. Rosser, Kingston; Fred B. Hicks, Henry Hosey, Isaac J. Thomas, Robert J. Tischler, William J. Hobbs, Milton Jones, Thomas H. Lewis, Joseph R. Thomas, Plymouth; Gwilym Jones, Dorranceton; Herbert Morris, William R. Roberts, William Price, Alfred Hazell, John Morris, Albert G. Wilczock, Michael A. Putera, Edwardsville.

ASSISTANT MINE FOREMEN

John J. Boney, Charles Thomas, John Crooks, Thomas Allan Evans, William T. Jones, Isaac Thomas, Joseph Zinski, Plymouth; Lewis Davis, Westmore; Cromwell Gibbon, John E. Jones, Robert H. Roberts, Kingston; Ernest J. Hilton, Timothy James O'Connell, Edward W. Davis, George Gregory, Richard Jones, William Pugh, Jr., Ben Roper, Edwardsville; Edward Struck, Larksville.

THIRTEENTH DISTRICT

LUZERNE COUNTY

Wilkes-Barre, Pa., February 20, 1917.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor to transmit herewith my report as Inspector of Mines for the Thirteenth Anthracite District for the year ending December 31, 1916.

Respectfully submitted,

FRANK KETTLE,
Inspector.

32—3—1916

SUMMARY OF STATISTICS

Number of collieries,	12
Number of mines,	48
Number of mines in operation,	48
Number of gaseous mines in operation,	27
Number of non-gaseous mines in operation,	21
Number of tons of coal shipped to market,	3,202,851
Number of tons used at mines for steam and heat,	242,583
Number of tons sold to local trade and used by employes,	47,528
Number of tons produced,	3,492,962
Number of persons employed inside of mines,	5,003
Number of persons employed outside,	1,471
Number of persons employed inside between 16 and 21 years,	334
Number of persons employed outside between 14 and 21 years,	302
Number of fatal accidents inside,	20
Number of fatal accidents outside,	2
Number of non-fatal accidents inside,	19
Number of non-fatal accidents outside,	1
Number of tons of coal produced per fatal accident inside,	174,648
Number of tons produced per fatal accident inside and outside,	158,771
Number of persons employed per fatal accident inside,	250
Number of persons employed per fatal accident outside,	736
Number of persons employed per fatal accident inside and outside,	294
Number of persons employed per non-fatal accident inside,	263
Number of persons employed per non-fatal accident outside,	1,471
Number of persons employed per non-fatal accident inside and outside,	324
Number of wives made widows,	14
Number of children made orphans,	34
Number of steam locomotives outside,	13
Number of compressed air locomotives inside,	3
Number of electric motors inside,	58
Number of electric motors outside,	5
Number of tubular boilers,	103
Number of steam engines of all classes,	278

Number of electric dynamos,	6
Number of pumps of all classes,	130
Number of pumps delivering water to surface,	38
Number of air compressors,	12
Number of fans in use,	27
Number of new mines opened,	7
Number of old mines abandoned,	2

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Delaware, Lackawanna and Western Railroad Company,	1,689,910
Lehigh and Wilkes-Barre Coal Company,	1,063,693
Lehigh Valley Coal Company,	415,028
George F. Lee Coal Company,	123,588
Pittston Coal Mining Company,	121,465
West Nanticoke Coal Company,	79,278
Total,	3,492,962

Production by Counties

Luzerne,	3,492,962

TABLE B.—Fatal and non-fatal accidents inside and outside of mines, number of tons of coal produced per accident, number of persons employed, number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Total number of employes	Number of employes inside per fatal accident	Number of employes outside per fatal accident	Number of employes inside per non-fatal accident	Number of employes outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Delaware, Lackawanna and Western Railroad Co.,	8	2	10	6	1	7	211,239	281,651	2,281	559	2,840	285	280	380	559
Lehigh and Wilkes-Barre Coal Co.,	6	------	6	8	------	8	177,282	132,961	1,528	580	2,108	255	--------	191	--------
Lehigh Valley Coal Co.,	3	------	3	1	------	1	138,342	415,028	599	154	753	200	--------	599	--------
George F. Lee Coal Co.,	------	------	------	1	------	1	----------	123,588	249	86	335	----------	--------	249	--------
Pittston Coal Mining Co.,	2	------	2	3	------	3	60,732	40,488	218	60	278	109	--------	73	--------
West Nanticoke Coal Co.,	1	------	1	------	------	------	79,278	----------	128	32	160	128	--------	--------	--------
Totals and averages,	20	2	22	19	1	20	174,648	183,840	5,003	1,471	6,474	250	736	263	1,471

TABLE C.—Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,	1										1		2	10.00
Falls of roof,	2			1				1	1			2	7	35.00
Mine cars,						1				2	1	1	5	25.00
Explosions of gas,						1					1		2	10.00
Suffocation by gas, etc.,						1							1	5.00
Explosions of powder and dynamite,			1										1	5.00
Blasts, premature and otherwise,		1											1	5.00
Falling into shafts,						1							1	5.00
Totals,	3	1	1	1		4		1	1	2	3	3	20	100.00
Outside														
Explosion of gas in shaft,												2	2	100.00
Totals,												2	2	100.00
Grand totals,	3	1	1	1		4		1	1	2	3	5	22	

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,		1				1							2	10.53
Falls of roof,		2		1			1		1	1	1		7	36.84
Mine cars,	1				1							1	3	15.79
Blasts, premature and otherwise,					1						1	1	3	15.79
Struck by piece of coal,										1			1	5.26
By falling,	1			1									2	10.53
Struck by timber,			1										1	5.26
Totals,	2	3	1	2	2	1	1		1	2	2	2	19	100.00
Outside														
Struck by timber,												1	1	100.00
Totals,												1	1	100.00
Grand totals,	2	3	1	2	2	1	1		1	2	2	3	20	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,	2	1	----	1	----	1	----	1	1	----	2	2	11
Miners' laborers,	1	----	1	----	----	1	----	----	----	1	1	1	6
Motormen and assistants,	----	----	----	----	----	----	----	----	----	1	----	----	1
Doorboys and helpers,	----	----	----	----	----	1	----	----	----	----	----	----	1
Shaftmen,	----	----	----	----	----	1	----	----	----	----	----	----	1
Totals,	3	1	1	1	----	4	----	1	1	2	3	3	20
Outside													
Rockmen,	----	----	----	----	----	----	----	----	----	----	----	2	2
Totals,	----	----	----	----	----	----	----	----	----	----	----	2	2
Grand totals,	3	1	1	1	----	4	----	1	1	2	3	5	22

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,	1	2	1	1	1	----	1	----	1	1	2	1	12
Miners' laborers,	----	1	----	1	----	----	----	----	----	----	----	----	2
Drivers and runners,	----	----	----	----	----	1	----	----	----	----	----	----	1
Motormen and assistants,	----	----	----	----	----	----	----	----	----	----	----	1	1
Doorboys and helpers,	----	----	----	----	1	----	----	----	----	----	----	----	1
Trackmen and bratticemen,	----	----	----	----	----	----	----	----	----	1	----	----	1
Timbermen and rockmen,	1	----	----	----	----	----	----	----	----	----	----	----	1
Totals,	2	3	1	2	2	1	1	----	1	2	2	2	19
Outside													
Headmen,	----	----	----	----	----	----	----	----	----	----	----	1	1
Totals,	----	----	----	----	----	----	----	----	----	----	----	1	1
Grand totals,	2	3	1	2	2	1	1	----	1	2	2	3	20

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,			1							1		1	3
English,												1	1
Welsh,												1	1
Scotch,						1							1
German,						1							1
Polish,	2			1							1	1	5
Italian,	1												1
Lithuanian,						1		1		1	2		5
Austrian,						1						1	2
Russian,		1							1				2
Totals,	3	1	1	1		4		1	1	2	3	5	22

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,		1	1		1	1				1		1	6
English,	1												1
Welsh,												1	1
Irish,									1				1
German,												1	1
Polish,		1		1	1						1		4
Lithuanian,	1	1		1			1				1		5
Austrian,										1			1
Totals,	2	3	1	2	2	1	1		1	2	2	3	20

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and types of safety lamps used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Delaware, Lackawanna and Western Railroad Co.										
Loomis Colliery:										
		I or No. 5 Vein,			1,600	15		Gaseous,	95	3
Loomis,	Luzerne,	G or Mills,		846				Gaseous,	186	8
		F or Hillman,		931				Gaseous,	354	4
Avondale Colliery:										
Avondale,	Luzerne,	B or Red Ash,		245				Gaseous,	11	6
Truesdale Colliery:										
Number 1,	Luzerne,	I or George,		546				Gaseous,	462	
		G or Mills,								
Number 2,	Luzerne,	F or Hillman,		593				Gaseous,	396	
		E or Baltimore,								
Number 1,	Luzerne,	E or Forge,			5,000	20		Gaseous,	314	
Number 5,	Luzerne,	D or Twin,			400	18		Gaseous,	294	
Number 6,	Luzerne,	C or Top Ross,			3,000	15				
Number 1,	Luzerne,	C or Bottom Ross,					1,000	Gaseous,	165	
		B or Top Red Ash,								
		B or Middle Red Ash,								
Number 20,	Luzerne,	B or Bottom Red Ash,					1,000	Gaseous,	134	

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and types of safety lamps used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Lehigh and Wilkes-Barre Coal Co.										
Sugar Notch No. 9 Colliery:										
		I or Kidney,	66	315				Gaseous,	152	
		H or Hillman,	72							
		G or Stanton,	48							
		F or Five Foot,	48							
Sugar Notch,	Luzerne,	E or Cooper,	58							
		E or Baltimore,	50							
		D or Twin,	54							
		C or Ross,	78							
		B or Top Red Ash,	36							
		B or Bottom Red Ash,	108							
Maxwell No. 20 Colliery:										
		I or Kidney,	72	653				Gaseous,	437	
		H or Hillman,	72	1,022				Gaseous,		
		G or Stanton,	36		650	19		Gaseous,		
		F or Five Foot,	54							
Maxwell No. 5,	Luzerne,	E or Cooper,	48							
		E or Baltimore,	72							
		C or Ross,	80							
		B or Top Red Ash,	64							
		B or Bottom Red Ash,	85							
Buttonwood No. 23 Colliery:										
Buttonwood No. 22,	Luzerne,	J or Abbott,	48	607						
Inman No. 21,	Luzerne,	I or Kidney,	66	1,521				Gaseous,	378	
		H or Hillman,	84							
		G or Stanton,	36							

Parrish,	Luzerne,	F or Five Foot,	54							
		E or Cooper,	48							
		E or Baltimore,	72							
		E or No. 3,	48							
		E or No. 4,	56							
		E or No. 5,	30							
		E or No. 6,	30							
Lehigh Valley Coal Co.										
Franklin Colliery:										
		K or Snake Island,	54		2,300	23		Gaseous,	125	
		J or Abbott,	54		960	30		Gaseous,		
		I or Bowkley,	72				Drift,	Gaseous,		
Sump,	Luzerne,	H or Hillman,	66							
Rock,	Luzerne,	F or Five Foot,	63							
Number 4,	Luzerne,	G or Lance and Sump	57							
		E or Baltimore,	156							
		D or Skidmore,	60							
		C or Ross,	45							
		B or Top Red Ash,	78							
		B or Bottom Red Ash,	144							
Warrior Run Colliery:										
		B or Bottom Red Ash,	96		200	25		Gaseous,	45	
		B or Top Red Ash,	78							
Number 1,	Luzerne,	C or Ross,	78		800	22		Gaseous,		
		E or Lower Baltimore	84							
Number 4,	Luzerne,	E or Upper Baltimore	50							
		G or Lance,	54							
		F or Five Foot,	54							
		H or Hillman,	96							
		I or Mills,	78							
George F. Lee Coal Co.										
Chauncey Colliery:										
Chauncey,	Luzerne,	B or Red Ash,	300		2,000	20		Non-gas.,		
Pittston Coal Mining Co.										
Hadleigh Colliery:										
		E or Cupola,	27							
		D or Twin,	48		374					
Hadleigh,	Luzerne,	C or Ross,	120				Drift,	Gaseous,	10	
		B or Red Ash,	120				Drift,			
West Nanticoke Coal Co.										
West Nanticoke Colliery:										
		B or Red Ash,	144		1,250	12		Non-gas.,		
West Nanticoke,	Luzerne,				450	18				
		C or Ross,			280	13		Non-gas.,		

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Delaware, Lackawanna and Western Railroad Co.												
Loomis Colliery:												
Loomis,	Luzerne,	I or No. 5 Vein,	Jeffrey,	20	96	3.4	Steam,	46,860	52,540	35,520	3	95
		G or Mills,	Jeffrey,*					77,920	92,310	50,260	4	186
		F or Hillman,						156,240	187,570	122,038	11	354
Avondale Colliery:												
Avondale,	Luzerne,	B or Red Ash,	Vulcan,	25	74	2.5	Steam,	108,500	113,500	106,000	7	239
			Vulcan,	16	120	2	Steam,					
			Dickson,	14	120	1.1	Steam,					
Truesdale Colliery:												
Number 1,	Luzerne,	I or George,	Guibal,	25	80	2.5	Steam,	265,000	280,000	240,000	17	316
		G or Mills,										
Number 2,	Luzerne,	F or Hillman,	Guibal,	25	80	2.5	Steam,	135,692	161,410	106,165	12	252
		E or Baltimore,										
Number 1,	Luzerne,	E or Forge,	Jeffrey,	16	105	3.4	Steam,	216,600	231,000	133,000	12	318
Number 5,	Luzerne,	D or Twin,	Jeffrey,	16	100	2.2	Steam,	971,115	103,150	84,950	9	207
Number 6,	Luzerne,	C or Top Ross,										
		C or Bottom Ross,										
Number 1,	Luzerne,	B or Top Red Ash,	Open,	12	124	1	Electricity,	49,200	60,900	37,300	6	130
		B or Middle Red Ash,										
Number 20,	Luzerne,	B or Bottom Red Ash,	Open,	12	125	.6	Electricity,	14,100	87,200	61,900	8	174

*Emergency.

Lehigh and Wilkes-Barre Coal Co.												
Sugar Notch No. 9 Colliery:												
		I or Kidney,	Guibal,	20	70	1.3	Steam,	375,950	466,482	318,148	15	728
		H or Hillman,	Guibal,	24	60	1.2						
		G or Stanton,										
		F or Five Foot,										
Sugar Notch,	Luzerne,	E or Cooper,										
		E or Baltimore,										
		D or Twin,										
		C or Ross,										
		B or Top Red Ash,										
		B or Bottom Red Ash,										
Maxwell No. 20 Colliery:												
		I or Kidney,										
		H or Hillman,										
		G or Stanton,										
		F or Five Foot,	Guibal,	25	72	1.8						
Maxwell No. 5,	Luzerne,	E or Cooper,	Guibal,	24	72	1.8	Steam,	407,090	432,190	382,080	26	655
		E or Baltimore,	Guibal,	35	46	1.4						
		C or Ross,	Guibal,	35	46	1.4						
		B or Top Red Ash,										
		B or Bottom Red Ash,										
Buttonwood No. 22 Colliery:												
		J or Abbott,	Guibal,	15	50	.6	Steam,					
		I or Kidney,	Guibal,	24	78	2	Steam,					
		H or Hillman,	Guibal,	35	50	2	Steam,	224,395	265,090	157,305	16	159
Buttonwood No. 22,	Luzerne,	G or Stanton,	Multivane,	6	174	.4	Electricity,					
Inman No. 21,	Luzerne,	F or Five Foot,	Guibal,	24	75	2.1	Steam,					
Parrish,	Luzerne,	E or Cooper,	Guibal,	20	80	2.1	Steam,					
		E or Baltimore,										
		E or No. 3,										
		E or No. 4,										
		E or No. 5,										
		E or No. 6,										
Lehigh Valley Coal Co.												
Franklin Colliery:												
Sump,	Luzerne,	K or Snake Island,						92,500	98,500	89,500	7	160
		J or Abbott,	Multivane,	16	90	1.6	Steam,	119,500	122,000	100,500	6	710
		I or Bowkley,						45,000	47,000	39,000	3	158
		H or Hillman,										
Rock,	Luzerne,	F or Five Foot,										
Number 4,	Luzerne,	G or Lance and Sump										
		E or Baltimore,										
		D or Skidmore,										
		C or Ross,										
		B or Top Red Ash,										
		B or Bottom Red Ash,										

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Warrior Run Colliery:												
		B or Bottom Red Ash,	Guibal,	20	60	1.2	Steam,	80,000	83,500	53,000	3	18
		B or Top Red Ash,					Natural,	45,000	48,500	37,000	3	37
Number 1,	Luzerne,	C or Ross,	Guibal,	14	75	.7	Steam,	41,000	29,000	67,000	3	56
		E or Lower Baltimore										
Number 4,	Luzerne,	E or Upper Baltimore										
		G or Lance,										
		F or Five Foot,										
		H or Hillman,										
		I or Mills,										
George F. Lee Coal Co. Chauncey Colliery:												
Chauncey,	Luzerne,	B or Red Ash,					Natural,	62,000	52,500	50,000		249
Pittston Coal Mining Co. Hadleigh Colliery:												
		E or Cupola,	Guibal,	16.6	72	.9	Steam,	56,000	70,000	45,000	4	215
Hadleigh,	Luzerne,	D or Twin,										
		C or Ross,										
		B or Red Ash,										
West Nanticoke Coal Co. West Nanticoke Colliery:												
		B or Red Ash,						94,628	97,340	92,700		129
West Nanticoke,	Luzerne,						Natural,	26,660	26,890	26,500		2
		C or Ross,										

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	General Superintendent	Post Office	Superintendent	Post Office	Railroad to Mine
Delaware, Lackawanna and Western Railroad Co.						
Loomis,	Luzerne,	William W. Inglis,	Scranton,	David Lloyd,	Wilkes-Barre,	D., L. and W.
Avondale,				P. H. Devers,	Nanticoke,	D., L. and W.
Truesdale,						
Lehigh and Wilkes-Barre Coal Co.						
Sugar Notch No. 9,	Luzerne,	C. F. Huber,	Wilkes-Barre,	E. J. Newbaker,	Wilkes-Barre,	C. R. R. of N. J.
Maxwell No. 20,						
Buttonwood No. 22,						
Parrish Washery,						
Buttonwood Washery,						
Lehigh Valley Coal Co.						
Warrior Run,	Luzerne,	Thomas Thomas,	Wilkes-Barre,	John H. Haertter,	Wilkes-Barre,	Lehigh Valley
Franklin,						
George F. Lee Coal Co.						
Chauncey,	Luzerne,	George F. Lee,	Wilkes-Barre,	George F. Lee,	Wilkes-Barre,	C. R. R. of N. J.
Pittston Coal Mining Co.						
Hadleigh,	Luzerne,	Charles M. O'Boyle,	Kingston,			C. R. R. of N. J.
West Nanticoke Coal Co.						
West Nanticoke,	Luzerne,	A. D. W. Smith,	Philadelphia,	E. W. Davis,	Dorranceton,	Pennsylvania

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives		
										Pounds of black powder used	Pounds of dynamite used	Pounds of permissible explosives used
Delaware, Lackawanna and Western Railroad Co.												
Loomis,	Luzerne,	416,518	8,959	736	426,213	265	857	4	1	183,875	45,100	129,450
Avondale,	Luzerne,	97,431	8,924	2,368	108,723	138	521	1	2	36,300	4,200	3,850
Truesdale,	Luzerne,	1,120,723	30,292	3,959	1,154,974	273	1,662	5	4	812,225	80,624	159,325
Totals,		1,634,672	48,175	7,063	1,689,910		2,840	10	7	1,032,400	129,924	292,625
Lehigh and Wilkes-Barre Coal Co.												
Sugar Notch No. 9,		299,336	21,995	3,890	325,221	245	712		4	138,800	19,322	114,263
Maxwell No. 20,		424,871	31,384	15,076	471,331	242	923	5	2	196,075	10,435	123,550
Buttonwood No. 22,		95,721	18,278	1,398	115,397	80	370	1	2	53,250	19,042	49,200
	Luzerne,	819,928	71,657	20,364	911,949		2,005	6	8	388,125	48,799	287,013
Washeries:												
Parrish,		75,394	23,411	5,342	104,147	208	72					
Buttonwood,		26,357	21,130	110	47,597	129	31					
Totals,		101,751	44,541	5,452	151,744		103					
		921,679	116,198	25,816	1,063,693		2,108	6	8	388,125	48,799	287,013

Lehigh Valley Coal Co.												
Warrior Run,	Luzerne,	62,915	21,753	2,547	87,215	*	154	1	1	44,425	14,385	
Franklin,		281,866	37,301	8,646	327,813	215	599	2		176,950	13,388	51,434
Totals,		344,781	59,054	11,193	415,028		753	3	1	221,375	27,773	51,434
George F. Lee Coal Co.												
Chauncey,	Luzerne,	114,117	7,000	2,471	123,588	266	335		1	13,725	16,563	
Pittston Coal Mining Co.												
Hadleigh,	Luzerne,	108,480	12,000	985	121,465	265	278	2	3	3,750	10,000	67,900
West Nanticoke Coal Co.												
West Nanticoke,	Luzerne,	79,122	156		79,278	236	160	1		26,325	3,375	3,005
Grand totals,		3,202,851	242,583	47,528	3,492,962		6,474	22	20	1,685,700	236,434	701,077

*Coal prepared at Prospect breaker.

TABLE 2.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Names of Operators	County	Power Plant: Boilers: Cylindrical: Number	Power Plant: Boilers: Cylindrical: Total horse power	Power Plant: Boilers: Tubular: Number	Power Plant: Boilers: Tubular: Total horse power	Power Plant: Engines: Steam Engines (All Classes): Number	Power Plant: Engines: Steam Engines (All Classes): Total horse power	Power Plant: Engines: Internal Combustion Engines (Gas): Number	Power Plant: Engines: Internal Combustion Engines (Gas): Total horse power	Power Plant: Engines: Electric Dynamos (All Classes): Number	Power Plant: Engines: Electric Dynamos (All Classes): Total kilowatts	Pumps: Number	Pumps: Total capacity in gallons per minute	Pumps: Pumps Delivering Water to the Surface: Number	Pumps: Pumps Delivering Water to the Surface: Approximate number of gallons per minute	Haulage: Number of horses and mules	Haulage: Locomotives: Gasoline	Haulage: Locomotives: Steam	Haulage: Locomotives: Air	Haulage: Locomotives: Electric	Air Compressors: Number	Air Compressors: Total capacity cubic feet per minute
Delaware, Lackawanna and Western Railroad Co.,	Luzerne,			20	4,733	60	10,416			4	2,050	64	34,737	19	16,600	94		7		56	5	4,200
Lehigh and Wilkes-Barre Coal Co.,				55	9,270	167	19,320			1	300	44	22,007	14	6,344	258		2	3	5	6	10,564
Lehigh Valley Coal Co.,				21	3,300	37	2,990					17	12,550	4	4,800	130		2			1	2,150
George F. Lee Coal Co.,				5	310	5	260															
Pittston Coal Mining Co.,				2	550	9	614			1	150	5	2,700	1	500	16		1		2		
West Nanticoke Coal Co.,																21		1				
Totals,				103	18,163	278	33,600			6	2,500	130	71,994	38	28,244	519		13	3	63	12	16,914

TABLE 3.—Part 1.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside															Total inside	Outside											Total outside	Grand total inside and outside
		Mine foremen	Assistant mine foremen	Fire bosses	Miners	Miners' laborers	Machine miners	Machine runners and scrapers	Drivers and runners	Motormen and assistants	Doorboys and helpers	Trackmen and brattiemen	Timbermen and rockmen	Pumpmen and pipemen	Electricians and helpers	All other employes		Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Machinists and helpers	Trackmen and helpers	Slate pickers (boys)	Slate pickers (men)	Office employes	All other employes			
Delaware, Lackawanna, and Western Railroad Co.,	Luzerne,	9	42	----	914	706	----	----	37	113	46	83	31	26	12	262	2,281	1	4	37	50	10	11	105	7	10	324	559	2,840
Lehigh and Wilkes-Barre Coal Co.,		4	4	36	583	520	----	----	123	10	69	42	28	25	----	284	1,528	----	4	15	90	3	3	54	9	9	393	580	2,108
Lehigh Valley Coal Co.		3	18	----	232	83	----	----	84	----	10	23	29	15	1	101	599	----	2	15	37	3	1	8	7	5	76	154	753
George F. Lee Coal Co.,		1	1	1	73	83	----	----	27	----	1	7	21	1	----	33	249	----	2	13	8	----	----	7	----	1	55	86	335
Pittston Coal Mining Co.,		1	2	----	95	85	----	----	14	4	3	2	2	3	1	6	218	1	2	6	10	1	2	5	6	1	26	60	278
West Nanticoke Coal Co.,		1	2	----	72	50	----	----	15	----	----	2	6	----	----	----	128	1	----	2	4	1	2	6	----	2	14	32	160
Totals,	----	19	69	37	1,949	1,327	----	----	300	127	129	159	117	70	14	686	5,002	3	14	88	199	18	19	185	29	28	888	1,471	6,474

TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Totals
Delaware, Lackawanna and Western Railroad Co.,	Luzerne,	20	18	21	10	19	20	21	18	20	21	19	19	226
Lehigh and Wilkes-Barre Coal Co.,		12	16	14	14	21	19	22	23	23	23	20	23	230
Lehigh Valley Coal Co.,		20	15	13	13	16	19	19	22	21	16	20	21	215
George F. Lee Coal Co.,		23	24	25	10	25	23	22	22	21	24	24	23	266
Pittston Coal Mining Co.,		25	21	24	16	24	21	22	26	15	25	23	23	265
West Nanticoke Coal Co.,		19	19	18	21	27	25	23	17	16	17	15	19	236

TABLE 4.—Fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 13	Toney Bartinilie,	Italian,	Miner,	24	S.			Hadleigh,		Killed by fall of rock on gangway.
15	Joseph Kuppelski,	Polish,	Laborer,	25	M.	1		Franklin,		Killed by fall of coal at face of chamber.
20	Stanley Karelezski,	Polish,	Miner,	33	M.	1	3	Loomis,		Killed by fall of rock at face of chamber.
Feb. 28	Andrew Baluta,	Russian,	Miner,	43	M.	1	4	Franklin,		Killed by a premature blast at face of chamber.
Mar. 20	Andrew Wolk,	American,	Laborer,	28	S.			Truesdale,		Killed by an explosion of giant powder in cross-cut.
April 12	Charles Zeabaski,	Polish,	Miner,	34	M.	1	4	Maxwell No. 20,		Killed by fall of roof at face of chamber.
June 10	Albert Schrader,	German,	Shaftman,	39	M.	1	4	Loomis,		Instantly killed by falling down shaft.
16	Mathew Ovens,	Scotch,	Doorman,	51	S.			Maxwell No. 20,		Fatally injured by cars on slope.
24	Alex Budloosney,	Austrian,	Laborer,	36	M.	1	1	West Nanticoke,		Suffocated by being covered by a fall of fine coal at face of chamber.
30	Paul Krickoozmies,	Lithuanian,	Miner,	37	M.	1	1	Maxwell No. 20,		Fatally burned by an explosion of gas at face of chamber.
Aug. 31	Charles Clemowicz,	Lithuanian,	Miner,	32	M.	1	4	Maxwell No. 20,		Killed by fall of rock at face of chamber.
Sept. 14	Stanley Barasky,	Russian,	Miner,	47	M.	1	1	Warrior Run,	Luzerne,	Killed by fall of rock at face of chamber.
Oct. 10	John Hyokus,	Lithuanian,	Laborer,	28	S.			Truesdale,		Killed by cars on slope.
	James Burns,	American,	Motorman,	23	S.			Truesdale,		Fatally squeezed between motor and truck on gangway.
Nov. 6	Frank Novttski,	Lithuanian,	Laborer,	23	S.			Hadleigh,		Fatally injured by cars on slope.
	Joseph White,	Lithuanian,	Miner,	32	S.			Truesdale,		Fatally burned by an explosion of gas at face of chamber.
21	Mike Kaski,	Polish,	Miner,	43	M.	1	4	Maxwell No. 20,		Killed by fall of coal at face of chamber.
Dec. 1	Evan Edwards,	Welsh,	Rockman,	57	W.			Loomis,		Killed by an explosion of gas in a sinking shaft. Both men had gone to the surface while they fired a shot. Outside
	Peter Andruchuck,	Polish,	Rockman,	23	M.	1				
8	Robert Bailes,	English,	Miner,	30	M.	1	2	Truesdale,		Fatally injured by a fall of rock at face of chamber.
12	Anthony Kravits,	Austrian,	Laborer,	40	M.	1	3	Buttonwood No. 22,		Fatally injured by cars at foot of plane.
29	Thomas Carroll,	American,	Miner,	33	M.	1	3	Avondale,		Killed by fall of rock and coal at face of chamber.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 7	Dominic Uwashbka,	Lithuanian,	Miner,	34	M.	Hadleigh,		Leg cut by falling in chamber while running from a blast.
29	Walter Beech,	English,	Rockman,	35	M.	Maxwell No. 20,		Body and head squeezed by falling under car.
Feb. 10	Frank Comminski,	Lithuanian,	Miner,	49	M.	Sugar Notch No. 9,		Leg fractured by fall of rock at face of chamber.
11	Joseph Sinkavage,	Polish,	Miner,	30	M.	Buttonwood No. 22,		Leg fractured by fall of coal at face of chamber.
26	Thomas J. Brislin,	American,	Laborer,	30	M.	Avondale,		Compound fracture of arm by fall of rock at face of chamber.
Mar. 14	George W. Jones,	American,	Miner,	36	M.	Chauncey,		Ribs fractured. Struck by timber in chamber.
April 7	Joseph Waronko,	Lithuanian,	Miner,	34	M.	Sugar Notch No. 9,		Ribs fractured by fall of rock at face of chamber.
12	Martin Tubec,	Polish,	Laborer,	40	M.	Maxwell No. 20,		Wrist fractured by falling down chamber.
May 8	Joseph Barlowski,	Polish,	Miner,	29	S.	Truesdale,	Luzerne,	Skull fractured. Struck by flying coal from blast.
23	John Rovinski,	American,	Patcher,	18	S.	Sugar Notch No. 9,		Tibia fractured by cars on gangway.
June 17	Ezra Roberts,	American,	Driver,	20	M.	Hadleigh,		Head and neck lacerated. Struck by fall of coal on gangway.
July 12	Peter Rasiemowicz,	Lithuanian,	Miner,	45	M.	Sugar Notch No. 9,		Leg fractured by fall of rock at face of chamber.
Sept. 21	Michael Carroll,	Irish	Miner,	61	M.	Avondale,		Shoulder and neck lacerated by fall of rock at face of chamber.
Oct. 5	Peter August,	Austrian,	Miner,	44	S.	Warrior Run,		Legs broken by fall of rock at face of chamber.
10	Benjamin Lloyd,	American,	Bratticeman,	27	S.	Truesdale,		Skull fractured. Struck by piece of coal on manway.
Nov. 3	Aleck Gruss,	Polish,	Miner,	23	S.	Hadleigh,		Face and body lacerated by flying coal from a delayed blast.
14	Thomas Teroski,	Lithuanian,	Miner,	22	S.	Buttonwood No. 22,		Leg fractured by fall of roof at face of chamber.

Dec.	1	William I. Jones,	Welsh,	Headman,	50	M.	Loomis,	Luzerne,	Head and neck lacerated. Struck by flying timber when an explosion of gas occurred in a sinking shaft. Outside.
	7	George Radko,	Polish,	Miner,	34	S.	Truesdale,		Leg fractured. Struck by flying coal from a blast.
	23	Ralph DeHaven,	American,	Motorman,	21	S.	Truesdale,		Leg cut off. Caught between cars on gangway.

CONDITION OF COLLIERIES

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Loomis Colliery.—Ventilation, drainage and roads, good. Condition as to safety, good.

Avondale Colliery.—Ventilation fair. Drainage, roads and condition as to safety, good.

Truesdale Colliery.—Ventilation, drainage and condition as to safety, good. Roads fair.

LEHIGH AND WILKES-BARRE COAL COMPANY

Sugar Notch No. 9 Colliery.—Ventilation, roads and condition as to safety, good. Drainage fair.

Maxwell No. 20 Colliery.—Ventilation fair. Drainage, roads and condition as to safety, good.

Buttonwood No. 22 Colliery.—Ventilation, roads and condition as to safety, good. Drainage fair. In the Parrish section, ventilation, drainage, roads and condition as to safety were good.

LEHIGH VALLEY COAL COMPANY

Warrior Run Colliery.—Ventilation, drainage and roads, fair. Condition as to safety, good.

Franklin Colliery.—Ventilation and condition as to safety, good. Drainage and roads, fair.

GEORGE F. LEE COAL COMPANY

Chauncey Colliery.—Ventilation and condition as to safety, good. Drainage and roads, fair.

PITTSTON COAL MINING COMPANY

Hadleigh Colliery.—Ventilation and drainage, fair. Roads and condition as to safety, good.

WEST NANTICOKE COAL COMPANY

West Nanticoke Colliery.—Ventilation, roads and condition as to safety, good. Drainage fair.

IMPROVEMENTS

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Loomis Colliery.—Completed roof cut in Mills vein, No. 1 tunnel, length 307 feet, and built concrete mule barn in No. 2 shaft.

Installed two 1,800-gallon centrifugal pumps, with motors, transformers, etc., one 7-ton locomotive with reel device; 4 self-dumping cages in Nos. 1 and 2 shafts; and steel supports for passing branch at head of No. 2 slope.

Outside: Built a new breaker, blacksmith, carpenter and machine shop, also shaft head-frames for Nos. 1 and 2 shafts, and shaft head-frames for No. 3 and Dundee shafts. Completed feed lines from substation to breaker and various buildings.

Installed machines, tools, etc., in machine shop. Built bridge to No. 3 shaft. Installed one 500 rotary converter, transformers, etc., loaded and retail scales, main conveyor line from Nos. 1 and 2 shafts to breaker. Placed a concrete floor in compressor and fan house.

Avondale Colliery.—Built a blacksmith, carpenter and machine shop.

Truesdale Colliery.—Completed rock tunnel, 453 feet, in Bottom Red Ash vein; rock tunnel, Mills to Hillman vein, 222 feet in length; rock skip No. 4 west airway, No. 1 slope, Mills vein; surface rock slope, No. 20 tunnel, length 780 feet; rock plane from George to Mills vein, length 249 feet; Rock tunnel, Red Ash to Ross vein, No. 2 slope, length 72 feet; rock tunnel, No. 3 slope, for passing branch, length 87 feet; extension of No. 9 slope in rock, length 363 feet; extension of No. 8 tunnel, Cooper to Hillman vein, length 370 feet; second opening rock plane from Top Red Ash to Ross vein, length 61 feet; second opening to No. 2 west lift, No. 6 slope, Hillman to Mills vein, length 87 feet.

Installed one 500 steam hammer for blacksmith shop; motors in three small air hoists; 7-ton locomotive with reel, etc., in No. 2 East lift, No. 6 slope; 7-ton locomotive with reel, etc., in No. 1 slope, Mills vein; 7-ton locomotive with reel, etc., in No. 3 east lift, No. 7 slope; and steam hoist for Forge vein plane, No. 1 tunnel.

LEHIGH AND WILKES-BARRE COAL COMPANY

Sugar Notch No. 9 Colliery.—Completed No. 31 tunnel, Twin to Hillman; No. 33 tunnel, Five Foot to Hillman; No. 34 tunnel, Red Ash to Twin; and No. 32 tunnel, Twin to Hillman.

Maxwell No. 20 Colliery.—Completed No. 31 tunnel, Red Ash to Ross; and No. 30 tunnel, Hillman to Kidney.

Buttonwood Colliery.—Completed No. 10 tunnel and tunnel airway extension to Abbott; tunnel No. 4 to No. 4 vein, and No. 16 tunnel, Abbott to Abbott.

At Inman No. 21 shaft, completed concrete and steel timbering, Hillman shaft level.

Outside: Installed one 32 by 48 inch duplex Corliss valve shaft engine for Hillman shaft, and also one for Baltimore shaft at Inman No. 21. Also built a brick engine house. Two steel head-frames, one for Baltimore shaft and one for Red Ash shaft, were built.

At Parrish washery, a 600 H. P. boiler plant was installed for Parrish slope.

LEHIGH VALLEY COAL COMPANY

Warrior Run Colliery.—Built a new concrete hospital in No. 4 tunnel level.

Outside: Constructed 2,000 feet of new 4 by 8 foot flume to carry creek and surface waters. The old flume was destroyed and washed out by cloudburst of June 27, 1916.

Franklin Colliery.—Completed No. 33 tunnel, from Baltimore to Sump vein; extension of No. 34 tunnel from Ross to Skidmore vein. Started driving No. 35 tunnel from Skidmore to Skidmore; No. 36 tunnel, from Skidmore to Skidmore through an anticlinal; No. 37 tunnel, Sump to Sump vein through fault; and No. 11 tunnel, on No. 4 tunnel level to the breaker.

Installed a 12 by 24 inch Vulcan hoist and a No. 10 Knowles pump on No. 20 slope in Skidmore vein. Constructed a concrete air bridge on No. 9 slope.

Built an addition to the Long slope barn.

Outside: A steel tramway was erected over the timber yard. A concrete entrance to sump slope manway was constructed. A new powder-house of concrete and hollow tile was built. The ground immediately west of the breaker was converted into a lawn and 100 feet of concrete laid in constructing the driveway. A concrete and hollow tile engine house was built and engine installed to operate fuel conveyor from the breaker to the boiler house.

PITTSTON COAL MINING COMPANY

Hadleigh Colliery.—Completed rock tunnel, from outside to Ross vein, a distance of 100 feet; also completed second opening; rock slope from Cupola to Twin vein, distance 200 feet; coal slope in Red Ash vein a distance of 440 feet, and drove a rock plane, from No. 4 tunnel, a distance of 200 feet to the Ross vein.

Installed one 125 horse power Lidgerwood electric hoist; one 14 by 20 by 11 by 18 compound duplex Laidlow-D-Gordon pump in Red Ash vein.

Built a concrete pumphouse, 60 by 30 by 10 feet, equipped with steel and arches, reinforced, and with all necessary fire protection.

Completed 500 feet of 8-inch cast iron pipe line from foot of shaft to No. 4 tunnel; retimbered shaft from surface to Red Ash vein.

Outside: Installed one Roybel overwinding device for safety; one 15-ton locomotive crane; 10 dump cars; one Scranton duplex plunger pump 12 by 7 by 12 inches with 300 feet of water line for breaker; two feed water pumps in boiler plant.

Built a washery with a capacity of 500 tons per day, equipped with shakers and simplex jigs, type "D," driven by one 50 H. P. G. E. motor. Constructed dam 50 by 25 by 10 feet of reinforced concrete and steel, for water supply to breaker for fire protection.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in the City Hall Building, Wilkes-Barre, June 6 and 7. Ths Board of Examiners was composed of Frank Kettle, Mine Inspector; Sheldon Jones, Superintendent, Wilkes-Barre; George W. Raub, Miner, Plymouth; and Patrick McGrane, Miner, Sugar Notch.

The following persons passed a satisfactory examination and were granted certificates.

MINE FOREMEN

Thomas J. Evans, Arthur Davis, Joseph Ruddick, Nanticoke; John Driscoll, Esau Davies, Plymouth; Edward J. Williams, William R. Williams, Warrior Run; John S. Lyons, Wilkes-Barre; Fredrick Holzberger, Dorranceton; John M. Williams, Rhone; Thomas F. Carr, Concrete City; William J. Williams, Buttonwood; Thomas L. McGuire, Rhone.

ASSISTANT MINE FOREMEN

Henry C. Jones, Thomas Humphreys, Daniel Thomas, Benjamin R. Phillips, Lewis Kessler, John Lazas, Otto G. Schimmel, Daniel Thomas, James J. Evans, David J. Thomas, Clarence Cromer, Gwilym Price, Nanticoke;; John Mayshak, John Bevan, Arthur Gray, Burt Paulhamous, John L. Williams, Wilkes-Barre; John H. Thomas, Owen S. Williams, Warrior Run; Andrew Mathues, Robert C. Ayers, William Calpin, Sugar Notch; Edgar Boston, Ashley; Raymond A. Gottshall, Askam; William McHale, Edward Campbell, Otto Pomrinca, Concrete City; Evans C. Jones, Larksville; Thomas Bart, Hanover.

FOURTEENTH DISTRICT

LUZERNE COUNTY

Nanticoke, Pa., February 20, 1917.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor to transmit herewith my annual report as Inspector of Mines for the Fourteenth Anthracite District, for the year ending December 31, 1916.

Respectfully submitted,

JOSEPH J. WALSH,
Inspector.

SUMMARY OF STATISTICS

Number of collieries,	10
Number of mines,	40
Number of mines in operation,	40
Number of gaseous mines in operation,	29
Number of non-gaseous mines in operation,	11
Number of tons of coal shipped to market,	3,045,524
Number of tons used at mines for steam and heat,	368,338
Number of tons sold to local trade and used by employes,	64,556
Number of tons produced,	3,478,418
Number of persons employed inside of mines,	5,544
Number of persons employed outside,	2,060
Number of persons employed inside between 16 and 21 years,	467
Number of persons employed outside between 14 and 21 years,	486
Number of fatal accidents inside,	28
Number of fatal accidents outside,	4
Number of non-fatal accidents inside,	19
Number of non-fatal accidents outside,	2
Number of tons of coal produced per fatal accident inside,	124,229
Number of tons produced per fatal accident inside and outside,	108,701
Number of persons employed per fatal accident inside,	198
Number of persons employed per fatal accident outside,	515
Number of persons employed per fatal accident inside and outside,	238
Number of persons employed per non-fatal accident inside,	292
Number of persons employed per non-fatal accident outside,	1,030
Number of persons employed per non-fatal accident inside and outside,	362
Number of wives made widows,	24
Number of children made orphans,	58
Number of steam locomotives inside,	2
Number of steam locomotives outside,	15
Number of compressed air locomotives inside,	12
Number of electric motors inside,	50
Number of electric motors outside,	1
Number of gasoline locomotives inside,	2
Number of cylindrical boilers,	12

Number of tubular boilers,	84
Number of steam engines of all classes,	158
Number of electric dynamos,	20
Number of pumps of all classes,	119
Number of pumps delivering water to surface,	27
Number of air compressors,	22
Number of fans in use,	41
Number of new mines opened,	1

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Susquehanna Coal Company,	1,381,185
Delaware, Lackawanna and Western Railroad Company,	741,492
West End Coal Company,	611,056
Lehigh and Wilkes-Barre Coal Company,	354,602
Alden Coal Company,	320,274
E. S. Stackhouse Coal Company,	69,445
East Alden Coal Company,	364
Total,	3,478,418

Production by Counties

Luzerne,	3,478,418

TABLE B.—Fatal and non-fatal accidents inside and outside of mines, number of tons of coal produced per accident, number of persons employed, number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Total number of employes	Number of employes inside per fatal accident	Number of employes outside per fatal accident	Number of employes inside per non-fatal accident	Number of employes outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Susquehanna Coal Co.,	11	3	14	5	------	5	125,562	276,237	2,426	1,141	3,567	221	380	485	------
Delaware, Lackawanna and Western Railroad Co.,	4	------	4	5	------	5	185,373	148,298	1,011	204	1,215	253	------	202	------
West End Coal Co.,	4	1	5	3	2	5	152,764	203,685	733	285	1,018	183	285	244	143
Lehigh and Wilkes-Barre Coal Co.,	2	------	2	2	------	2	177,301	177,301	626	173	799	313	------	313	------
Alden Coal Co.,	6	------	6	2	------	2	53,379	160,137	612	189	801	102	------	306	------
E. S. Stackhouse Coal Co.,	1	------	1	2	------	2	69,445	34,723	109	52	161	109	------	55	------
Miscellaneous Companies,	------	------	------	------	------	------	------	------	27	16	43	------	------	------	------
Totals and averages,	28	4	32	19	2	21	124,229	183,075	5,544	2,060	7,604	198	515	292	1,030

TABLE C.—Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,						1				1			2	7.14
Falls of roof,			1	1	1	1	1	2				2	9	32.14
Mine cars,											1	1	2	7.14
Explosions of gas,							1						1	3.57
Suffocation by gas, etc.,			1							2			3	10.72
Blasts, premature and otherwise,		1	1					1		1			4	14.29
Struck by timber,									1				1	3.58
Falling into slopes, etc.,					1								1	3.57
Crushed at battery,										1			1	3.57
Crushed by cage,	1												1	3.57
Falling,		1											1	3.57
Electricity,								1					1	3.57
Clothing took fire from lamp,								1					1	3.57
Totals,	1	2	3	1	2	2	2	5	1	5	1	3	28	100.00
Outside														
Cars,		1									1		2	50.00
Machinery,			1										1	25.00
Struck by bar,								1					1	25.00
Totals,		1	1					1			1		4	100.00
Grand totals,	1	3	4	1	2	2	2	6	1	5	2	3	32	

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,	1		1									1	3	15.79
Falls of roof,		1			1				1	1			4	21.05
Mine cars,			1				1		1	2	1		6	31.58
Blasts, premature and otherwise,						1				1			2	10.53
Struck by timber,				1			1						2	10.53
Struck by rock,					1								1	5.26
Falling,				1									1	5.26
Totals,	1	1	2	2	2	1	2		2	4	1	1	19	100.00
Outside														
Cars,						1				1			2	100.00
Totals,						1				1			2	100.00
Grand totals,	1	1	2	2	2	2	2		2	5	1	1	21	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,		1	2		1	1	2	1	1	3		2	14
Miners' laborers,			1	1	1	1		2		1			7
Drivers and runners,											1	1	2
Motormen and assistants,										1			1
Timbermen and rockmen,								1					1
Pumpmen and pipemen,	1							1					2
Bell boys,		1											1
Totals,	1	2	3	1	2	2	2	5	1	5	1	3	28
Outside													
Engineers and firemen,		1	1										2
Laborers,								1			1		2
Totals,		1	1					1			1		4
Grand totals,	1	3	4	1	2	2	2	6	1	5	2	3	32

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,	1	1	1		2	1	1		1	2			11
Miners' laborers,												1	1
Drivers and runners,			1	1					1				3
Motormen and assistants,										1			1
Timbermen and rockmen,											1		1
Footmen,				1									1
Masons,							1						1
Totals,	1	1	2	2	2	1	2		2	4	1	1	19
Outside													
Brakemen,						1				1			2
Totals,						1				1			2
Grand totals,	1	1	2	2	2	2	2		2	5	1	1	21

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	1				1			2		2	1		7
Welsh,				1									1
Polish,		3	1		1	2	2	2	1	3		3	18
Hungarian,			1										1
Italian,			1								1		2
Slavonian,								1					1
Lithuanian,			1										1
Russian,								1					1
Totals,	1	3	4	1	2	2	2	6	1	5	2	3	32

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,		1	1			1			1	2			6
Welsh,						1							1
Polish,	1		1	2	1		2			1	1	1	10
Italian,					1								1
Slavonian,									1	1			2
Lithuanian,										1			1
Totals,	1	1	2	2	2	2	2		2	5	1	1	21

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and Types of Safety Lamps Used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Susquehanna Coal Co. Colliery No. 5:										
Number 2,	Luzerne,	G—Mills,	108	690				Gaseous,	317	2
		F—Hillman,	102							
		D—Twin,	82							
		C—Ross,	75							
		I—George,	27							
		H—Orchard,	82							
Number 4,	Luzerne,	G—Mills,	108		3,600	14		Gaseous,	264	
		F—Hillman,	102							
		Top E—Lance,	68							
		E—Cooper,	99							
		D—Twin,	82							
Number 1,	Luzerne,	C—Ross,	75		1,580	15		Gaseous,	35	1
		B—Lee,	76							
		Bottom E—Forge,	68							
Number 4,	Luzerne,	D—Twin,	82	634				Gaseous,	93	
		C—Ross,	75							
Number 5,	Luzerne,	F—Hillman,	102	219				Gaseous,	31	
		E—Cooper,	99							
Number 28,	Luzerne,	B—Lee,	76				Tunnel,	Non-gas.,		
Number 29,	Luzerne,	D—Twin,	82				Tunnel,	Non-gas.,		
		Top C—Top Ross,	48							

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and Types of Safety Lamps Used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Colliery No. 6:										
Number 6,	Luzerne,	F—Hillman,	102	732				Gaseous,	50	
		D—Twin,	82							
		Top C—Top Ross,	48							
		C—Ross,	75							
Number 7,	Luzerne,	D—Twin,	82	395				Gaseous,	96	
		Top C—Top Ross,	48							
		C—Ross,	75							
Number 1,	Luzerne,	D—Twin,	82				Tunnel,	Gaseous,	2	
		C—Ross,	75							
Colliery No. 7:		C—Ross,	75				Drift,	Gaseous,	5	
Number 8,	Luzerne,	E—Cooper,	99	511				Gaseous,	47	
		D—Twin,	82	987				Gaseous,	350	20
Number 1 South,	Luzerne,	D—Twin,	75							
		C—Ross,	76							
		B—Lee,	27							
		I—George,	82							
Number 1 North,	Luzerne,	H—Orchard,	102	541				Gaseous,	350	5
		F—Hillman,	99							
		E—Cooper,	68							
		Bottom E—Forge,								
Delaware, Lackawanna and Western Railroad Co. Auchincloss Colliery:										
Number 1,	Luzerne,	G—Mills,	108	1,064				Gaseous,	185	
		F—Hillman,	102							
		E—Baltimore,	99							
		C—Ross,	75							

Number 2,	Luzerne,	G—Mills,	108	1,225			Gaseous,	129	
		F—Hillman,	102						
		E—Baltimore,	120						
Bliss Colliery:									
		G—Mills,	108						
		F—Hillman,	102						
		E—Baltimore,	144						
Number 1,	Luzerne,	Bottom E—Forge,	68	900			Gaseous,	500	22
		D—Twin,	82						
		C—Ross,	75						
		B—Red Ash,	86						
Espy,	Luzerne,	C—Ross,	75			Tunnel,	Gaseous,	54	
		B—Red Ash,	86						
West End Coal Co.									
West End Colliery:									
		Top C—Top Ross,	48						
Lee,	Luzerne,	C—Ross,	75	420			Gaseous,	22	2
		Top B—Top Red Ash	51						
		B—Red Ash,	76						
Number 1, Lee,	Luzerne,	C—Ross,	75			Drift,	Gaseous,	15	
		B—Red Ash,	76						
Sand,	Luzerne,	C—Ross,	75			Drift,	Gaseous,	20	
		B—Red Ash,	76						
Barney,		C—Ross,	75						
Golden,	Luzerne,	C—Ross,	75			Drift,	Non-gas.,		
Number 3, Lee,		B—Red Ash,	76						
		Top C—Top Ross,	51						
Long,	Luzerne,	C—Ross,	75			Drift,	Gaseous,	60	
		Top B—Top Red Ash	48						
		B—Red Ash,	76						
Lehigh and Wilkes-Barre Coal Co.									
Wanamie No. 18 Colliery:									
		E—Baltimore,	99						
Number 2,	Luzerne,	D—Twin,	82		420	12	Gaseous,	112	
		C—Ross,	75						
		B—Red Ash,	76						
Number 3,	Luzerne,	F—Hillman,	102						
Number 1,	Luzerne,	E—Baltimore,	99						
Number 3,	Luzerne,	Bottom E—Forge,	68		1,380	18	Drift,	Gaseous,	100
		D—Twin,	82						
Polander,	Luzerne,	C—Ross,	75						
		B—Red Ash,	76						
Number 28,	Luzerne,	C—Ross,	75				Tunnel,	Gaseous,	
		B—Red Ash,	76						

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening: Shaft — Depth	Slope (Coal or Rock) — Length	Slope (Coal or Rock) — Average pitch—degrees	Drift	Gaseous or Non-gaseous	Number and Types of Safety Lamps Used: Flame	Electric
Alden Coal Co.										
Alden Colliery:										
Number 1,	Luzerne,	E—Bennett,	54							
		D—Twin,	42							
		C—Ross,	60	587				Gaseous,	124	
		Top B—Top Red Ash	42							
		B—Red Ash,	54							
		A—George,	42							
		G—Mills,	72							
		F—Hillman,	66							
		E—Cooper,	72							
Number 2,	Luzerne,	Bottom E—Bennett,	54	1,154				Gaseous,	575	
		D—Twin,	50							
		C—Ross,	60							
		Top B—Top Red Ash	42							
		Bottom B—Bottom Red Ash	54							
Baltimore,	Luzerne,	Bottom E—Baltimore	96		800	15		Non-gas.,		
Ridgewood,	Luzerne,	Bottom E—Baltimore	96		600	15		Non-gas.,		
E. S. Stackhouse Coal Co.										
Salem Colliery:										
Number 1,	Luzerne,	B—Red Ash,	60				Tunnel,	Non-gas.,		
Number 2,		Top B—Top Red Ash	36				Tunnel,			
Number 3,		C—Ross,	72				Drift,			
Number 4,		C—Ross,	60				Drift,			
East Alden Coal Co.										
East Alden Colliery:										
Number 1,	Luzerne,	C—Ross,	84		750	60		Gaseous,	12	
		B—Red Ash,	80							

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Susquehanna Coal Co. Colliery No. 5:												
Number 2,	Luzerne,	G—Mills,	Guibal,	25	72	2.1	Steam,	20,000	25,000	16,000	2	15
		F—Hillman,	Guibal,	25	60	1.6	Steam,	51,200	60,500	40,600	7	140
		D—Twin,	Guibal,	25	64	.2	Steam,	40,270	51,100	32,000	4	240
		C—Ross,										
Number 4,	Luzerne,	I—George,	Guibal,	20	90	1.8	Steam,	35,430	60,300	23,000	3	60
		H—Orchard,	*Guibal,	25	64	.2	Steam,	38,000	43,260	28,000	3	
		G—Mills,	Guibal,	16	65	.9	Steam,	24,200	28,000	16,000	2	101
		F—Hillman,	Guibal,	20	90	.2	Steam,	15,680	18,200	13,000	1	8
		Top E—Lance,	Capell,	10	180	2.3	Electricity,	10,150	12,000	8,450	1	48
		E—Cooper,										
Number 1,	Luzerne,	D—Twin,	*Guibal,	25	60	1.6	Steam,	14,440	19,120	13,300	2	67
		C—Ross,										
		B—Lee,										
Number 4,	Luzerne,	Bottom E—Forge,	Vulcan,	20	70	1.4	Steam,	123,600	125,000	112,000	10	196
		D—Twin,										
		C—Ross,										
Number 5,	Luzerne,	F—Hillman,	Sturtevant,	8	90	.6	Steam,	15,000	17,000	12,000	2	54
		E—Cooper,										
Number 28,	Luzerne,	B—Lee,	Sturtevant,	5	250	.2	Electricity,	15,000	16,500	10,000	1	20
Number 29,	Luzerne,	D—Twin,	*Sturtevant,	5	250	.2	Electricity,	16,400	18,000	13,000	1	35
		Top C—Top Ross,										

*Used for ventilating different openings.

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Colliery No. 6:												
Number 6,	Luzerne,	F—Hillman, D—Twin, Top C—Top Ross, C—Ross,	Guibal,	25	45	1.3	Steam,	93,000	96,000	90,000	5	101
Number 7,	Luzerne,	D—Twin, Top C—Top Ross, C—Ross,	Vulcan, Jeffrey,	10 10	120 150	1.4 1.3	Steam, Electricity,	86,900 42,600	88,100 44,000	82,000 40,000	8 4	273 54
Number 6,	Luzerne,	D—Twin, C—Ross,	Guibal,	20	68	.7	Steam,	55,000	57,000	51,000	6	181
Number 1,	Luzerne,	C—Ross,	Capell,	7	175	.8	Electricity,	54,000	55,000	51,000	2	96
Colliery No. 7:												
Number 8,	Luzerne,	E—Cooper, D—Twin,	*Guibal,	20	90	2	Steam,	11,000	12,000	10,000	1	37
Number 1 South,	Luzerne,	D—Twin, C—Ross, B—Lee,	Vulcan, Guibal,	17 25	125 62	3.9 1.6	Steam, Steam,	128,000 48,000	135,000 50,000	120,000 41,000	5 2	280 65
Number 1 North,	Luzerne,	I—George, H—Orchard, F- Hillman, E—Cooper, Bottom E—Forge,	*Guibal, Vulcan, Guibal, *Capell, Guibal,	20 17 25 10 16	90 125 64 180 65	2 3.9 2 2.3 .9	Steam, Steam, Steam, Electricity, Steam,	81,200 15,800 26,000 54,100 10,100	87,000 18,000 31,000 59,000 11,000	62,000 12,000 23,000 42,000 7,200	3 1 2 3 1	80 25 60 150 30

*Used for ventilating different openings.

Delaware, Lackawanna and Western Railroad Co.												
Auchincloss Colliery:												
Number 1,	Luzerne,	G—Mills, F—Hillman, E—Baltimore, C—Ross,	Guibal,	25	75	3	Steam,	93,000	98,500	87,666	4	182
Number 2,	Luzerne,	G—Mills, F—Hillman, E—Baltimore,	Guibal,	35	42	2	Steam,	122,000	131,000	105,600	12	150
Bliss Colliery:												
Number 1,	Luzerne,	G—Mills, F—Hillman, E—Baltimore,	Guibal,	35	52	2.3	Steam,	180,000	245,000	170,000	25	549
		Bottom E—Forge, D—Twin, C—Ross, B—Red Ash,	Guibal,	24	72	1.6	Steam,					
Espy,	Luzerne,	C—Ross, B—Red Ash,	Vulcan,	17	102	3.2	Steam,	58,000	62,000	51,000	5	60
West End Coal Co.												
West End Colliery:												
Lee,	Luzerne,	Top C—Top Ross, C—Ross, Top B—Top Red Ash B—Red Ash,	Jeffrey,	8	100	1.4	Electricity,	94,600	108,300	56,700	4	269
Number 1, Lee,	Luzerne,	C—Ross, B Red Ash,	Guibal,	15	90	.8	Electricity,	93,200	96,300	45,000	2	53
Sand,	Luzerne,	C—Ross, B—Red Ash,	American,	45	500	1	Electricity,	41,000	43,000	24,200	2	47
Barney, Golden, Number 3, Lee,	Luzerne,	C—Ross, C—Ross, B—Red Ash,					Natural,	27,000	28,500	1,800	2	90
Long,	Luzerne,	Top C—Top Ross, C—Ross,	Guibal,	16	90	1.4	Steam,	67,000	89,200	62,000	2	80
		Top B—Top Red Ash B—Red Ash,	American,	6	400	.5	Electricity,	62,000	74,000	58,000	3	194
Lehigh and Wilkes-Barre Coal Co.												
Wanamie No. 18 Colliery:												
Number 2,	Luzerne,	E—Baltimore, D—Twin, C—Ross, B—Red Ash,	Guibal,	24	70	1.7	Steam,	120,000	126,000	100,000	12	240
Number 3,	Luzerne,	F—Hillman,	Guibal,	24	70	1.8	Steam,	126,000	132,000	105,000	9	220
Number 1,	Luzerne,	E—Baltimore,										
Number 3,	Luzerne,	Bottom E—Forge, D—Twin,										
Polander,	Luzerne,	C—Ross, B—Red Ash,										

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Number 28,	Luzerne,	C—Ross, B—Red Ash,	Guibal,	8	105	.5	Steam,	10,000	11,000	8,000	1	36
Alden Coal Co. Alden Colliery:												
Number 1,	Luzerne,	E—Bennet, D—Twin, C—Ross, Top B—Top Red Ash B—Red Ash, I—George, G—Mills, F—Hillman, E—Cooper,	Guibal,	15	83	2	Steam,	62,200	67,000	52,000	6	133
Number 2,	Luzerne,	Bottom E—Bennett, D—Twin, C—Ross, Top B—Top Red Ash Bottom B—Bottom Red Ash	Guibal, Guibal,	24 24	68 70	2 1.5	Steam, Steam,	125,700 145,000	129,000 151,000	113,000 126,000	4 10	45 206
Baltimore,	Luzerne,	Bottom E—Baltimore	Guibal,	15	40	.5	Steam,	12,000	13,000	9,000	1	23
Ridgewood,	Luzerne,	Bottom E—Baltimore	Guibal,	24	68	2	Steam,	18,000	18,500	14,000	2	56

E. S. Stackhouse Coal Co.													
Salem Colliery:													
Number 1,	Luzerne,	B—Red Ash,	Stine,	4	320	1.7	Natural,	11,000	12,000	7,000	1	30
Number 2,		Top B—Top Red Ash					Electricity,	16,000	17,000	8,000	1	20
		C—Ross,					Natural,	8,000	8,500	6,000	1	15
Number 3,		C—Ross,	Stine,	5	450	1.8	Electricity,	24,000	26,000	18,000	3	54
Number 4,												
East Alden Coal Co.													
East Alden Colliery:													
Number 1,	Luzerne,	C—Ross,	Guibal,	4	320	1	Electricity,	7,000	7,500	6,000	2	27
		B—Red Ash,										

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	General Superintendent	Post Office	Superintendent	Post Office	Railroad to Mine
Susquehanna Coal Co. Numbers 5, 6, 7, Nanticoke Washery,	Luzerne,	Robert A. Quinn,	Wilkes-Barre,	Francis H. Kohlbraker.	Nanticoke,	Pennsylvania
Delaware, Lackawanna and Western Railroad Co. Auchincloss, Bliss,	Luzerne,	W. W. Inglis,	Scranton,	David Lloyd, W. F. Powell,	Wilkes-Barre, Nanticoke,	D. L. and W.
West End Coal Co. West End,	Luzerne,	Eli T. Conner,	Scranton,	H. A. Fillmore,	Shickshinny,	Pennsylvania and C. R. R. of N. J.
Lehigh and Wilkes-Barre Coal Co. Wanamie No. 18,	Luzerne,	C. F. Huber,	Wilkes-Barre,	E. J. Newbaker,	Wilkes-Barre,	C. R. R. of N. J.
Alden Coal Co. Alden,	Luzerne,	K. M. Smith,	Alden Station,	K. M. Smith,	Alden Station,	C. R. R. of N. J.
E. S. Stackhouse Coal Co. Salem,	Luzerne,	E. S. Stackhouse,	Shickshinny,	E. S. Stackhouse,	Shickshinny,	D. L. and W.
East Alden Coal Co. East Alden,	Luzerne,	William A. McGinley,	Alden,	William A. McGinley,	Alden,	Lehigh Valley

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives: Pounds of black powder used	Explosives: Pounds of dynamite used	Explosives: Pounds of permissible explosives used
Susquehanna Coal Co.												
Number 5,	Luzerne,	326,961	68,976	9,944	465,881	210	1,324	4	2	283,900	28,184	18,400
Number 6,		369,725	51,561	5,197	426,483	208	1,040	4		241,875	56,279	8,625
Number 7,		300,451	75,687	12,997	389,135	201	1,140	5	3	139,425	16,650	83,525
		997,137	196,224	28,138	1,221,499		3,504	13	5	665,200	101,113	110,550
Nanticoke Washery,		159,686			159,686	295	63	1				
Totals,		1,156,823	196,224	28,138	1,381,185		3,567	14	5	665,200	101,113	110,550
Delaware, Lackawanna and Western Railroad Co.												
Auchincloss,	Luzerne,	205,636	9,107	5,979	220,722	256	451	1	3	4,650	5,300	134,250
Bliss,		483,866	32,107	4,797	520,770	270	764	3	2	290,850	25,962	39,677
Totals,		689,502	41,214	10,776	741,492		1,215	4	5	295,500	31,262	173,927
West End Coal Co.												
West End,	Luzerne,	525,967	75,600	9,489	611,056	290	1,018	5	5	69,500	72,850	141,378
Lehigh and Wilkes-Barre Coal Co.												
Wanamie Number 18,	Luzerne,	333,118	18,539	2,945	354,602	185	799	2	2	201,875	18,219	40,648

TABLE 2.—Part 1.—Continued

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives		
										Pounds of black powder used	Pounds of dynamite used	Pounds of permissible explosives used
Alden Coal Co. Alden,	Luzerne,	273,013	35,511	11,750	320,274	236	801	6	2	160,875	12,475	43,325
E. S. Stackhouse Coal Co. Salem,	Luzerne,	63,737	1,250	1,458	69,445	218	161	1	2	45,175	9,071	3,825
East Alden Coal Co. East Alden,	Luzerne,	364			364	53	43			750	25	
Grand totals,		3,045,524	368,338	64,556	3,478,418		7,604	32	21	1,438,875	245,015	513,653

TABLE 2.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Names of Operators	County	Power Plant										Pumps				Haulage					Air Compressors	
		Boilers				Engines											Locomotives					
		Cylindrical		Tubular		Steam Engines (All Classes)		Internal Combustion Engines (Gas)		Electric Dynamos (All Classes)		Number	Total capacity in gallons per minute	Pumps Delivering Water to the Surface		Number of horses and mules					Number	Total capacity cubic feet per minute
		Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total watts kilo-			Number	Approximate number of gallons per minute		Gasoline	Steam	Air	Electric		
Susquehanna Coal Co.,	Luzerne,	12	420	45	11,232	60	13,200			8	1,463	66	19,200	8	8,000	302			12	12	10	12,100
Delaware, Lackawanna and Western Railroad Co.,				7	3,512	29	5,003			5	1,021	6	4,700	3	1,280	79		2		19	2	2,400
West End Coal Co.,				10	3,300	28	2,440			5	1,150	31	4,700	8	4,200	31		9		16	4	5,000
Lehigh and Wilkes-Barre Coal Co.,				10	1,666	32	3,562					6	6,022	3	1,469	105		4			1	285
Alden Coal Co.,				11	2,262	9	1,375					6	2,000	2	1,000	72	2	2			4	4,189
E. S. Stackhouse Coal Co.,				1	150					1	275	3	335	2	185	2				4	1	600
East Alden Coal Co.,										1	150	1	150	1	50							
Totals,		12	420	84	22,122	158	25,580			20	4,059	119	37,107	27	16,184	591	2	17	12	51	22	24,574

TABLE 3.—Part 1.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside														Total inside	Outside										Total outside	Grand total inside and outside
		Mine foremen	Assistant mine foremen	Fire bosses	Miners	Miners' laborers	Machine miners	Machine runners and scrapers	Drivers and runners	Motormen and assistants	Doorboys and helpers	Trackmen and brattiemen	Timbermen and rockmen	Pumpmen and pipemen	Electricians and helpers	All other employes		Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Machinists and helpers	Trackmen and helpers	Slate pickers (boys)	Slate pickers (men)	Office employes	All other employes		
Susquehanna Coal Co.,	Luzerne,	7	10	37	838	631	----	----	242	54	38	121	241	20	----	187	2,426	2	5	96	167	49	24	115	31	17	635	1,141	3,567
Delaware, Lackawanna and Western Railroad Co.,		3	25	----	370	281	----	----	63	35	28	43	38	9	7	109	1,011	1	1	14	32	3	----	36	1	6	110	204	1,215
West End Coal Co.,		3	7	4	309	226	----	----	22	46	5	27	10	9	10	55	733	1	2	24	23	12	11	23	4	5	180	285	1,018
Lehigh and Wilkes-Barre Coal Co.,		1	2	14	287	157	----	----	55	----	35	27	16	8	----	24	626	----	1	7	24	----	4	23	1	6	107	173	799
Alden Coal Co.,		1	2	6	230	135	----	----	114	4	21	17	6	7	----	69	612	1	1	13	36	3	2	35	26	9	63	189	801
E. S. Stackhouse Coal Co.,		1	1	----	15	8	----	----	----	----	----	----	----	2	----	----	109	----	1	4	1	----	2	6	3	2	33	52	161
East Alden Coal Co.,		1	----	----	50	41	----	----	----	9	1	----	----	----	1	6	27	1	1	1	2	----	----	----	----	1	10	16	43
Totals,		17	47	61	2,099	1,479	----	----	496	148	128	235	311	55	18	450	5,544	6	12	159	285	67	43	238	66	46	1,138	2,060	7,604

TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Total
Susquehanna Coal Co.,	Luzerne,	19	12	13	15	22	21	21	21	14	12	15	18	206
Delaware, Lackawanna and Western Railroad Co.,		21	19	25	12	22	22	24	21	24	25	24	24	263
West End Coal Co.,		24	24	23	24	26	22	25	26	23	24	23	23	290
Lehigh and Wilkes-Barre Coal Co.,		18	18	15	16	24	22	22			5	23	22	185
Alden Coal Co.,		22	20	25	13	18	16	20	23	18	22	20	19	236
E. S. Stackhouse Coal Co.,		19	21	23	13	5	10	17	17	20	25	25	23	218
East Alden Coal Co.,												26	27	53

TABLE 4.—Fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 9	Peter Swanberry,	American,	Pump-runner,	67	M.	1	1	Alden,		Crushed by shaft cage. He stepped off cage before it reached the bottom and fell into the sump.
Feb. 11	Mike Novak,	Polish,	Miner,	51	M.	1	6	Alden,		Fatally injured by premature blast.
14	Peter Shima,	Polish,	Bell-boy,	17	S.			Auchincloss,		Fatally injured by falling on pulley while running up a slope.
16	Joseph Pasetzski,	Polish,	Fireman,	45	M.	1	4	Number 5,		Fatally burned by steam and otherwise injured. A derailed car broke a steam pipe and squeezed him against boiler. Outside.
Mar. 8	Cheslaw Heinjenski,	Polish,	Fireman,	26	M.	1	1	Number 7,		Fatally injured. While replacing a belt on pulley his arm was torn off and both legs broken. Outside.
9	Edward Wintersteen,	Hungarian,	Miner,	38	M.	1	6	Salem,		Died from effects of carbon monoxide poisoning. He went back to the face of his chamber too soon after firing three blasts.
29	Frank Yarros,	Lithuanian,	Miner,	37	M.	1	3	Number 6,	Luzerne,	Killed by fall of rock at face of chamber.
30	Albert Bartinelli,	Italian,	Laborer,	24	S.			Number 5,		Fatally injured by premature blast.
April 6	Isiak Walters,	Welsh,	Laborer,	64	M.	1		Number 7,		Killed by fall of rock on gangway road.
May 4	Frank Shemanski,	Polish,	Miner,	29	M.	1	3	Number 7,		Killed by falling to bottom of manway while walking up manway in pitching chamber.
24	Zegman Sagmanski,	American,	Laborer,	19	S.			Wanamie No. 18,		Killed by fall of rock near face of gangway.
June 20	Stanley Sobotski,	Polish,	Laborer,	35	M.	1	2	Bliss,		Killed by fall of top coal at face of chamber.
15	Bolislof Sherkoski,	Polish,	Miner,	35	M.	1	5	Wanamie No. 18,		Killed by fall of rock at face of chamber.
July 12	John Deboski,	Polish,	Miner,	44	M.	1	4	Alden,		Fatally burned by gas at face of chamber.

July	22	Andrew Gogolinski,	Polish,	Miner,	39	M.	1	3	West End,		Fatally injured by fall of rock. An empty car on which he was riding became derailed and knocked out a timber leg, which allowed the rock to fall.
Aug.	11	Nicholas Littleford,	American,	Timberman,	51	M.	1	2	Number 7,		Killed by fall of rock on gangway while making room for a set of timber.
	16	George Wido,	Slavonian,	Pumpman,	62	M.	1	2	West End,		Fatally burned. His clothing took fire from his lamp while sleeping in the pump-room.
	25	Andrew Smyslo,	Polish,	Laborer,	23	M.	1	1	Number 6,		Electrocuted by coming in contact with trolley wire while loading car at platform.
	28	Joseph Zolteviez,	American,	Laborer,	17	S.			Nanticoke Washery,		Fatally injured. While tearing out an old chute with a bar he slipped and the bar, on which he was sitting, punctured him near rectum. Outside.
	30	Anthony Koboshik,	Polish,	Laborer,	30	M.	1		Number 6,		Killed by fall of rock in working place.
		Harry Kerrick,	Russian,	Miner,	38	M.	1	4	Alden,		Killed by premature blast.
Sept.	11	Karmin Dombrosfki,	Polish,	Miner,	36	M.	1	3	Bliss,		Fatally injured. Struck by timber that was dislodged by fall of rock.
Oct.	2	Lyman Deets,	American,	Motorman,	34	M.	1	1	West End,	Luzerne,	Killed by rush of coal while starting battery.
		Herman Golwatski,	Polish,	Miner,	26	S.			West End,		Killed by fall of top coal at face of chamber.
	4	Milton Hontz,	American,	Miner,	52	M.	1		Alden,		Fatally injured by premature blast.
	19	Frank Gurski,	Polish,	Miner,	54	M.	1		Number 5,		Died from effects of carbon monoxide poisoning. They disregarded the warning of officials and went into a closed section of the mine.
		John Shunitzki,	Polish,	Laborer,	25	M.	1				
Nov.	8	Toney Samona,	Italian,	Laborer,	28	S.			West End,		Fatally injured by mine cars. Outside.
		Raymond Cywinski,	American,	Driver,	18	S.			Bliss,		Fatally injured by mine cars on gangway.
Dec.	16	John Kolboski,	Polish,	Miner,	43	M.	1	2	Alden,		Killed by fall of roof at face of chamber.
	20	Joseph Katta,	Polish,	Miner,	48	M.	1	5	Number 7,		Killed by fall of roof 25 feet from face of chamber.
	23	John Swikoski,	Polish,	Driver,	19	S.			Number 6,		Killed by cars on gangway road.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 15	Frank Weizbicki,	Polish,	Miner,	37	M.	Salem,	Luzerne,	Hip dislocated by fall of coal at face of chamber.
Feb. 9	Joseph Frankewicz,	American,	Miner,	25	S.	Alden,		Jaw and arm fractured by fall of rock while trimming roof at face of chamber.
Mar. 7	William Tompson,	American,	Runner,	27	S.	Auchincloss,		Foot bruised. Squeezed between cars.
10	Zigmund Garlinski,	Polish,	Miner,	32	M.	Alden,		Leg broken and back injured by fall of coal at face of chamber.
April 4	Stanley Kowalski,	Polish,	Footman,	21	S.	Number 7,		Arm broken by dislodged prop falling on him.
29	Eddie Bradyze,	Polish,	Patcher,	17	S.	Wanamie No. 18,		Elbow fractured by falling when jumping off moving car.
May 3	Stanley Siepietowski,	Polish,	Miner,	33	M.	Wanamie No. 18,		Ribs fractured and body and legs bruised by fall of rock in chamber.
	Peter Passetti,	Italian,	Miner,	35	M.	West End,		Leg broken by slide of rock while working in old chamber.
June 14	William D. Hopkins,	Welsh,	Miner,	41	M.	Number 5,		Head, face and body severely cut by delayed blast.
19	Loren Sorber,	American,	Brakeman,	22	S.	West End,		Arm fractured by car while spragging it. Outside.
July 18	Albert Plezia,	Polish,	Mason helper,	60	M.	Number 5,		Arm and rib broken and internally injured. Struck by trip of cars at foot of slope.
18	Barney Falooski,	Polish,	Miner,	34	M.	Bliss,		Rib fractured by prop falling on him.
Sept. 19	Walter A. Williams,	American,	Driver,	18	S.	Auchincloss,		Leg fractured by car.
25	William Halupka,	Slavonian,	Miner,	37	M.	Salem,		Leg broken by fall of rock in chamber.
Oct. 6	Joseph Wabble,	Lithuanian,	Miner,	40	M.	Bliss,		Arm fractured and face and head lacerated by premature blast.
10	Stanley Everet,	American,	Brakeman,	20	S.	Auchincloss,		Thigh fractured. Squeezed between cars.
20	Andrew Seletzki,	Slavonian,	Miner,	58	M.	Number 7,		Leg broken. Squeezed against rib by derailed car.
20	Leslie Girton,	American,	Brakeman,	27	M.	West End,		Finger run over while putting a shoe under car wheel. Outside.

Oct.	26	William Youstadt, --	Polish, ----	Miner, ----------	35	M.	West End, ----------	Rib fractured and body bruised by fall of rock while putting up set of timber.
Nov.	15	Zigie Gruskiewicz, ---	Polish, -----	Timberman, -------	21	S.	Number 7, ----------	Thigh fractured and body injured, by being squeezed between cars.
Dec.	13	George Pokoko, -----	Polish, -----	Laborer, ----------	45	M.	West End, ----------	Thigh fractured by fall of coal at face of chamber.

CONDITION OF COLLIERIES

SUSQUEHANNA COAL COMPANY

Numbers 5, 6 and 7 Collieries.—Ventilation, fair. Drainage and condition as to safety, good.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Auchincloss and Bliss Collieries.—Ventilation, drainage and condition as to safety, goood.

WEST END COAL COMPANY

West End Colliery.—Ventilation and drainage, fair. Condition as to safety, good.

LEHIGH AND WILKES-BARRE COAL COMPANY

Wanamie No. 18 Colliery.—Ventilation fair. Drainage and condition as to safety, good.

ALDEN COAL COMPANY

Alden Colliery.—Ventilation and condition as to safety, good. Drainage fair.

E. S. STACKHOUSE COAL COMPANY

Salem Colliery.—Ventilation and drainage, fair. Condition as to safety, good.

EAST ALDEN COAL COMPANY

East Alden Colliery.—Ventilation, drainage and condition as to safety, good.

IMPROVEMENTS

SUSQUEHANNA COAL COMPANY

Colliery No. 5.—Purchased 24 new steel body mine cars. Installed in No. 5 breaker 4 new Wilmot jigs.

Placed 151 sets of steel timber. Erected electric sub-station for electric haulage. Completed 12 inch steam line for new power plant.

Rock tunnel No. 6, in No. 4 shaft, Stearns, from Bottom to Top Ross seam, was driven 109 2-3 yards during the year.

Colliery No. 6.—Purchased and placed in service 28 new steel body mine cars.

No. 5 tunnel, from Bottom Ross seam in the Glen Lyon basin to the Bottom Ross seam in the Priscilla Lee basin, was driven 186 yards during the year, making a total of 1,043 yeards driven to date.

No. 5 plane, from No. 5 tunnel, was driven 297 1-3 yards during the year. No. 32 tunnel, from No. 5 tunnel, was driven 69 2-3 yards during the year.

A new wash-house was erected at No. 7 shaft.

Colliery No. 7.—Installed 12 Wilmot jigs and 3 Norman pickers in No. 7 breaker.

Installed 25 new steel body mine cars at colliery.

Placed 139 sets of steel timber in the North shaft.

No. 59 tunnel, from Middle Ross to Top Ross seam, South shaft, was driven 45 1-3 yards during the year.

No. 62 tunnel from Mills to Hillman seam, North shaft, was driven 35 yards.

Installed in the North shaft 3 Westinghouse 8-ton locomotives.

At No. 8 shaft, electric sub-station was erected.

An air compressor 14 by 9 by 12 was installed.

DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

Auchincloss Colliery.—Outside: Renewed cross-arms carrying high tension lines. Installed two 27-ton steam locomotives to transport coal from Auchincloss to Loomis.

Inside: Rock tunnel, Baltimore to Mills vein, 72 feet long, was driven.

Installed electric hoist, No. 24 tunnel, Baltimore vein, No. 2 shaft.

Rock tunnel from Hillman to Mills vein, 150 feet long, was driven.

Installed one 7-ton reel locomotive, Ross vein, No. 2 shaft.

Installed one 7-ton locomotive, No. 23 tunnel.

Bliss Colliery.—Outside: A new sprinkling system was installed in the breaker.

Air shaft from the surface to Mills seam was enlarged and provided with iron stairway.

Inside: No. 15 slope was driven from Ross to Ross vein through fault, 159 feet long.

New pump station at Baltimore landing was completed, and one Scranton pump, size 28 by 12 by 36, capacity 1,200 gallons per minute, was installed.

LEHIGH AND WILKES-BARRE COAL COMPANY

Wanamie No. 18 Colliery.—Outside: Completed during the year, 18 by 30 inch tower hoisting engines and brick house. Brick colliery shop. 24 by 42 inch hoisting engines and brick house, No. 2 slope.

Inside: No. 36 tunnel extended Baltimore to Baltimore; No. 26 tunnel extended Baltimore to Kidney; No. 38 tunnel extended to Ross; No. 6 slope extended Bottom to Top Red Ash; tunnel driven Hillman to Top Hillman.

ALDEN COAL COMPANY

Alden Colliery.—Rock plane driven from Cooper to Hillman; air shaft driven from Cooper to Hillman; rock slope driven from Cooper to Bennett in the North basin.

One pair 15 by 18 inch geared Vulcan engines installed for a tower hoist, at the breaker.

An 18 by 30 by 10 by 36 compound duplex Goyne pump, with a 10 by 14 by 18 condensor, has been installed at the bottom of No. 1 shaft.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in Nanticoke, June 6 and 7. The Board of Examiners was composed of Joseph J. Walsh, Mine Inspector; F. H. Kohlbraker, Superintendent; John H. Keating and Albon Gonsoski, Miners.

The following persons passed a satisfactory examination and were granted certificates:

MINE FOREMEN.

Martin Bednarek, David Blythe, William A. Byron, Jr., David Griffiths, Daniel Jones, Edgar Jones, Reese Jones, Thomas Millington, William F. Pioch, William Poole, Fred W. Smith, Herbert Swales, Ernest Turner and John D. Williams, Nanticoke; Gerald Kelly, Benjamin Phillips, Wanamie.

ASSISTANT MINE FOREMEN.

Archie Bartle, Thomas Chamberlain, Stanley Chika, Arthur Gething, Joseph Hudotchik, Peter Jonashefski, Gustave Kasch, Samuel Lewellyn, Thomas W. Maddox, Percy Masters, Stanley A. Pastuszak, John Sheba, William W. Smith, Wlad. E. Sontowski, Edwin Thomas, Morgan F. Thomas, Francis Truscott, Ivor Vincent, Nanticoke; Thomas G. Kochuba, Wilkes-Barre; Anthony Kovaleski, Glen Lyon; David Lewis, West Nanticoke; George E. Spayd, Wanamie.

FIFTEENTH DISTRICT

LUZERNE COUNTY

Hazleton, Pa., February 17, 1917.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor of transmitting herewith my annual report as Inspector of Mines for the Fifteenth Anthracite District, for year ending December 31, 1916.

Respectfully submitted,

DAVID J. RODERICK,
Inspector.

SUMMARY OF STATISTICS

Number of collieries,	15
Number of mines,	59
Number of mines in operation,	59
Number of gaseous mines in operation,	27
Number of non-gaseous mines in operation,	32
Number of tons of coal shipped to market,	3,444,752
Number of tons used at mines for steam and heat,	499,064
Number of tons sold to local trade and used by employes,	142,212
Number of tons produced,	4,086,028
Number of persons employed inside of mines,	4,470
Number of persons employed outside,	2,288
Number of persons employed inside between 16 and 21 years,	206
Number of persons employed outside between 14 and 21 years,	422
Number of fatal accidents inside,	14
Number of fatal accidents outside,	5
Number of non-fatal accidents inside,	51
Number of non-fatal accidents outside,	36
Number of tons of coal produced per fatal accident inside,	291,859
Number of tons produced per fatal accident inside and outside,	215,054
Number of persons employed per fatal accident inside,	319
Number of persons employed per fatal accident outside,	458
Number of persons employed per fatal accident inside and outside,	356
Number of persons employed per non-fatal accident inside,	88
Number of persons employed per non-fatal accident outside,	64
Number of persons employed per non-fatal accident inside and outside,	78
Number of wives made widows,	12
Number of children made orphans,	30
Number of steam locomotives inside,	2
Number of steam locomotives outside,	66
Number of compressed air locomotives inside,	10
Number of electric motors inside,	28
Number of gasoline locomotives outside,	1
Number of tubular boilers,	160
Number of steam engines of all classes,	241

Number of internal combustion engines (gas),	1
Number of electric dynamos,	12
Number of pumps of all classes,	62
Number of pumps delivering water to surface,	54
Number of air compressors,	23
Number of fans in use,	40

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
G. B. Markle Company,	1,439,325
Coxe Brothers and Company, Incorporated,	927,053
Pardee Brothers and Company, Incorporated,	620,453
Lehigh Valley Coal Company,	538,130
Upper Lehigh Coal Company,	220,009
John S. Wentz and Company,	126,941
M. S. Kemmerer and Company,	123,209
Harleigh Brookwood Coal Company,	82,644
Wolf Collieries Company, Incorporated,	8,264
Total,	4,086,028

Production by Counties

Luzerne,	4,086,028

TABLE B.—Fatal and non-fatal accidents inside and outside of mines, number of tons of coal produced per accident, number of persons employed, number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Total number of employes	Number of employes inside per fatal accident	Number of employes outside per fatal accident	Number of employes inside per non-fatal accident	Number of employes outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
G. B. Markle Co.,	4	2	6	8	8	16	359,891	179,946	1,493	736	2,159	356	368	178	92
Coxe Brothers and Co., Inc.,	3	2	5	16	14	30	309,018	57,941	841	383	1,224	280	191	53	27
Pardee Brothers and Co., Inc.,	4	1	5	6	4	10	155,113	103,409	780	279	1,059	195	279	130	70
Lehigh Valley Coal Co.,	3	3	6	9	4	13	179,377	59,792	789	430	1,219	263	143	88	107
John S. Wentz and Co.,				5	1	6		25,388	128	87	215			26	87
M. S. Kemmerer and Co.,				6	4	10		20,535	190	100	290			32	25
Harleigh Brookwood Coal Co.,					1	1			144	69	213				69
Wolf Collieries Co., Inc.,						1		8,264	66	14	80			66	
Miscellaneous Companies,				1		1			109	100	209				
Totals and averages,	14	5	19	51	36	87	291,859	80,118	4,470	2,288	6,758	319	458	88	64

TABLE C.—Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,							1	1					2	14.29
Falls of slate,	1								1				2	14.29
Mine cars,	1		1										2	14.29
Suffocation by gas, etc.,	2												2	14.29
Explosions of powder and dynamite,						1							1	7.14
Falling into slopes, etc.,							1						1	7.14
Crushed at batteries,									1				1	7.14
Rush of slate,								1					1	7.14
Rush of water,			1										1	7.14
Drowned by falling into old workings,										1			1	7.14
Totals,	4		2			1	2	2	2	1			14	100.00
Outside														
Cars,											1		1	20.00
Machinery,							1						1	20.00
Suffocation in chutes, etc.,				1									1	20.00
Crushed by steam shovel,										1			1	20.00
Struck by piece of rock,		1											1	20.00
Totals,		1		1			1			1	1		5	100.00
Grand totals,	4	1	2	1		1	3	2	2	2	1		19	

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,		1			1	1	1	1			1	2	8	15.69
Falls of slate,					2			1			1		4	7.85
Falls of roof,						1			2		1		4	7.85
Mine cars,	1		3	1	1		1	2	3			2	14	27.45
Explosions of gas,				1		1							2	3.92
Explosions of powder and dynamite,										1			1	1.96
Struck by timber,							1						1	1.96
Struck by rail,					1								1	1.96
Struck by piece of coal,					1				1			1	3	5.88
Struck by ax,		1											1	1.96
Rush of coal,							1						1	1.96
Rush of rock,						1							1	1.96
Rush of water,			1										1	1.96
Squeezed between timber,												1	1	1.96
Squeezed by rail,											1		1	1.96
Squeezed between timber and chute,								1					1	1.96
Falling against rock,											1		1	1.96
Caught by nail in chute,											1		1	1.96
Hand punctured by stick,			1										1	1.96
Cut by sheet iron,	1								1				2	3.92
Mules,	1												1	1.96
Totals,	3	2	5	2	6	4	4	5	7	1	6	6	51	100.00
Outside														
Machinery,		1								3			4	11.11
Cars,	1	1	1			1		1	2	1	2	1	11	30.55
Struck by piece of iron,											1		1	2.77
Struck by iron bar,									1				1	2.78
Struck by piece of coal,		1	1		1		1						4	11.11
Struck by timber,			1									1	2	5.55
Falling off locomotive,											1		1	2.78
Falling in engine house,												1	1	2.78
Falling against car,									1				1	2.78
Falling into tank,				1									1	2.78
Falling against boiler,			1										1	2.78
Falling against concrete wall,	1												1	2.78
Caught in wagon wheel,											1		1	2.78
Knocked off railroad car,										1			1	2.78
Burned by steam pipe,										1			1	2.78
Scalded by steam,									1				1	2.78
Fall of coal on stripping,				1									1	2.78
Rush of bank,				2									2	5.55
Totals,	2	3	4	3	2	1	1	1	5	6	5	3	36	100.00
Grand totals,	5	5	9	5	8	5	5	6	12	7	11	9	87	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,	2		1			1	2		2	1			9
Miners' laborers	1							2					3
Patchers,	1		1										2
Totals,	4		2			1	2	2	2	1			14
Outside													
Contractors,											1		1
Laborers,				1			1						2
Jackmen,		1								1			2
Totals,		1		1			1			1	1		5
Grand totals,	4	1	2	1		1	3	2	2	2	1		19

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,	1	2	2	2	3	4	2	2	3	1	4	5	31
Miners' laborers,					2		1	2	1		2		8
Drivers and runners,	2		3		1			1	1				8
Doorboys and helpers,							1		1				2
Patchers,									1			1	2
Totals,	3	2	5	2	6	4	4	5	7	1	6	6	51
Outside													
Foremen,											1		1
Blacksmiths and carpenters,			1	1							1		3
Engineers and firemen,	1									2		1	4
Machinists,									1				1
Slatepickers (boys),			1							1			2
Slatepickers (men),												1	1
Sawers,												1	1
Miners,					1								1
Drivers and runners,										1	1		2
Shifters,										1			1
Roadmen,											1		1
Hitchers,											1		1
Shippers,									1				1
Ashmen,									1				1
Jig runners,		1											1
Electricians,										1			1
Topmen,		1											1
Laborers,		1	1	2	1	1	1		1				8
Patchers,	1		1					1	1				4
Totals,	2	3	4	3	2	1	1	1	5	6	5	3	36
Grand totals,	5	5	9	5	8	5	5	6	12	7	11	9	87

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	3		1										4
Polish,							1	1		1			3
Hungarian,		1											1
Italian,						1	1						2
Slavonian,							1	1		1			3
Lithuanian,									1				1
Austrian,			1						1				2
Russian,	1			1									2
Hebrew,											1		1
Totals,	4	1	2	1		1	3	2	2	2	1		19

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	4	1	6	1	2	1	2	2	3	5	4	1	32
Irish,		1							1			2	4
German,												1	1
Polish,		1		2				1	2	1		1	8
Hungarian,						1	1	1	2		1	1	7
Montenegrin,									1				1
Italian,		1	1		2	1		1		1			7
Slavonian,	1	1	1	2	2	1	1	1	2		3	2	17
Austrian,			1		1						2		4
Russian,					1	1	1		1		1	1	6
Totals,	5	5	9	5	8	5	5	6	12	7	11	9	87

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and types of safety lamps used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
G. B. Markle Co.										
Jeddo No. 4 Colliery:										
Jeddo No. 4,	Luzerne,	Buck Mountain,	90		450	30		Gaseous,	20	
Jeddo No. 4,		Orchard,	120	130				Non-gas.,		
Jeddo No. 4,		Mammoth and Wharton.	372		760	30		Gaseous,	3	
Ebervale Colliery:										
Ebervale,	Luzerne,	Primrose,	72		612	28		Non-gas.,		
Ebervale,		Mammoth and Wharton.	384		870	28		Gaseous,	4	
Highland No. 5 Colliery:										
Highland No. 5,	Luzerne,	Buck Mountain,	144				Tunnel,	Gaseous,	6	
Highland No. 5,		Buck Mountain,	144		740	35		Gaseous,	18	
Highland No. 5,		Buck Mountain,	150		450	23		Non-gas.,		
					320					
Highland No. 2 Colliery:										
Highland No. 1,	Luzerne,	Buck Mountain,	144		715	30		Gaseous,	12	
Highland No. 2,		Buck Mountain,	144		688	40		Gaseous,	12	
Highland No. 6,		Buck Mountain and Alpha.	148		290	25		Non-gas.,		
Jeddo No. 7 Colliery:										
Jeddo No. 7,	Luzerne,	Primrose,	66		550	25		Non-gas.,		
Jeddo No. 7,		Mammoth and Wharton.	384		410	23		Non-gas.,		

Coxe Brothers and Co., Inc.											
Drifton No. 1 Colliery:											
Drifton No. 1,	Luzerne,	Buck Mountain,	96								
		Wharton,	48		800	22		Gaseous,			
		Gamma,	18								
		Mammoth,	240								
Drifton Colliery No. 2:											
Drifton No. 2,	Luzerne,	Buck Mountain,	96								
		Wharton,	48		900	45		Gaseous,			
		Gamma,	18								
		Mammoth,	240								
Eckley and Buck Mountain Colliery:											
Counsel Ridge No. 2,	Luzerne,	Buck Mountain,	180		1,400	20		Non-gas.,			
Counsel Ridge No. 11,		Buck Mountain,	180		720	20		Non-gas.,			
Eckley No. 1,		Buck Mountain,	180		500	15		Non-gas.,			
Eckley No. 2,		Buck Mountain,	180		500	15		Non-gas.,			
Eckley No. 6,		Buck Mountain,	180								
		Gamma,	18		600	45		Non-gas.,			
		Wharton,	48								
Eckley No. 10,		Buck Mountain,	180		1,350	18		Non-gas.,			
Derringer, Gowan and Tomhicken Colliery:											
Tomhicken,	Luzerne,	Buck Mountain,	36								
		Mammoth,	144				Drift,	Gaseous,			
		Wharton,	48								
		Primrose,	108								
Deringer,	Luzerne,	Buck Mountain,	72								
		Mammoth,	80								
		Gamma,	18				Drift,	Gaseous,		12	
		Wharton,	48								
		Primrose,	30								
Gowen No. 4,	Luzerne,	Buck Mountain,	72								
		Mammoth,	80								
		Gamma,	18		440	26		Gaseous,		8	
		Wharton,	48								
		Primrose,	30								
Gowen No. 3,	Luzerne,	Buck Mountain,	100								
		Mammoth,	96								
		Gamma,	18				Drift,	Gaseous,		10	
		Wharton,	48								
		Primrose,	74								
Pardee Brothers and Co., Inc. Lattimer Colliery:											
Lattimer No. 8,	Luzerne,	Mammoth,	360								
		Gamma,	81		400	41		Gaseous,		17	
		Buck Mountain,	54								

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and types of safety lamps used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Lattimer No. 9,	Luzerne,	Alpha,	54		470	55		Gaseous,	25	
		Alpha,	54							
		Mammoth,	360							
Lattimer Nos. 9 and 12,	Luzerne,	Gamma,	81		970	36		Gaseous,		
		Buck Mountain,	54							
		Alpha,	54							
		Alpha,	54		850	15		Non-gas.,	2	
Lattimer No. 22,	Luzerne,	Buck Mountain,	36		700	27		Non-gas.,	3	
Lattimer No. 20,	Luzerne,	Mammoth,	360							
		Gamma,	81		900	32		Gaseous,	23	
Lattimer No. 27,	Luzerne,	Buck Mountain,	54							
		Mammoth,	36							
		Gamma,	54	300				Gaseous,	20	
Lattimer Nos. 17 and 26,	Luzerne,	Buck Mountain,	32							
		Alpha,	24							
Lehigh Valley Coal Co. Hazleton No. 1 Colliery:										
		Buck Mountain,	48							
		Gamma,	27							
		Wharton,	54							
Hazleton Nos. 1 and 8,	Luzerne,	Mammoth,	270		1,930	19		Gaseous,		
		Primrose,	38		530	24		Gaseous,		
		Orchard,	36							
		Diamond,	72							
		Tracey,	43							

Hazleton Shaft Colliery:								
Hazleton Shaft,	Luzerne,	Buck Mountain,	48	382				Gaseous,
		Gamma,	27					
Hazleton No. 3,		Wharton,	54		1,500	41		Gaseous,
Hazleton No. 5,	Luzerne,	Mammoth,	270		940	51		Gaseous,
Stockton No. 2,		Primrose,	38		250	46		Gaseous,
		Orchard,	36					
Hazleton No. 40,	Luzerne,	Diamond,	72		770	30		Gaseous,
		Tracey,	43					
Upper Lehigh Coal Co.								
Upper Lehigh Colliery:								
Upper Lehigh No. 5,		Buck Mountain,	96		350	20		Non-gas.,
Upper Lehigh No. 12,	Luzerne,	Buck Mountain,	24		350	23		Non-gas.,
Upper Lehigh No. 15,		Buck Mountain,	24		350	23		Non-gas.,
John S. Wentz and Co.								
Hazle Brook Colliery:								
Hazle Brook No. 1,		Buck Mountain,						
Hazle Brook No. 5,		Buck Mountain,	36		400	45		Non-gas.,
Hazle Brook No. 10,		Gamma,	144		450	60		Non-gas.,
Hazle Brook No. 14,	Luzerne,	Gamma,	48		150	30		Non-gas.,
Hazle Brook No. 16,		Wharton,	72		200	30		Non-gas.,
Hazle Brook No. 17,		Wharton,	60		600	30		Non-gas.,
Hazle Brook No. 19,			96		210	45		Non-gas.,
Hazle Brook No. 23,					150	45		Non-gas.,
					130	40		Non-gas.,
S. S. Kemmerer and Co.								
Sandy Run Colliery:								
Sandy Run No. 2,		Buck Mountain,						
Sandy Run No. 5,	Luzerne,	Buck Mountain,	144		364	42		Non-gas.,
Sandy Run No. 8,		Wharton,	144		596	23		Non-gas.,
			96		322	23		Non-gas.,
Harleigh Brookwood Coal Co.								
Harleigh Colliery:								
Spear Point,	Luzerne,	Wharton,	99		1,200	30		Non-gas.,
		Mammoth,	300					
Fish tail,	Luzerne,	Buck Mountain,	42		175	30		Non-gas.,
Buck Mountain,		Buck Mountain,	48		500	30		Non-gas.,
Wolf Collieries Co., Inc.								
Wolf Colliery:								
Wolf,	Luzerne,							
		Buck Mountain,	144		325	32		Non-gas.,
		Gamma,	36					

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
G. B. Markle Co.												
Jeddo No. 4 Colliery:												
Jeddo No. 4,	Luzerne,	Buck Mountain,	Guibal,	25	85	3.2	Steam,	50,000	62,000	40,000	4	54
Jeddo No. 4,		Orchard,	Guibal,	16	80	.5	Steam,	36,700	43,500	27,000	4	107
Jeddo No. 4,		Mammoth and Wharton.	Guibal,	16	75	1	Steam,	66,000	87,000	45,000	5	179
Ebervale Colliery:												
Ebervale,	Luzerne,	Primrose,	Guibal,	10	125	.8	Steam,	17,000	15,000	12,000	2	8
Ebervale,		Mammoth and Wharton.	Guibal,	16	104	1.9	Steam,	55,800	54,000	35,200	4	155
Highland No. 5 Colliery:												
Highland No. 5,	Luzerne,	Buck Mountain,					Natural,	11,000	12,600	6,000	2	20
Highland No. 5,		Buck Mountain,	Guibal,	16	100	1.9	Steam,	45,000	60,000	35,000	6	146
Highland No. 5,		Buck Mountain,	Sturtevant	7	100	1	Steam,	23,000	40,000	14,000	2	36
Highland No. 2 Colliery:												
Highland No. 1,	Luzerne,	Buck Mountain,										
Highland No. 2,		Buck Mountain,					Natural,	48,000	49,700	45,200	3	80
Highland No. 6,		Buck Mountain and Alpha.	Guibal,	16	70	.8	Steam,	33,000	35,000	31,700	2	78
			Guibal,	16	90	1	Steam,	63,500	80,000	49,000	7	102
Jeddo No. 7 Colliery:												
Jeddo No. 7,	Luzerne,	Primrose,	Guibal,	16	50	.6	Electricity,	34,600	38,000	24,000	2	36
Jeddo No. 7,		Mammoth and Wharton.					Natural,	8,600	10,000	6,500	1	11

Coxe Brothers and Co., Inc.												
Drifton No. 1 Colliery:												
Drifton No. 1,	Luzerne,	Buck Mountain, Wharton, Gamma, Mammoth,	Guibal,	16	50	4.5	Steam,	57,000	63,000	62,000	8	214
Drifton Colliery No. 2:												
Drifton No. 2,	Luzerne,	Buck Mountain, Wharton, Gamma, Mammoth,	Guibal, Guibal,	18 20	60 70	5 6	Steam,	162,000	146,000	49,000	8	16
Eckley and Buck Mountain Colliery:												
Counsel Ridge No. 2,		Buck Mountain,					Natural,	15,000	15,000	14,000	3	10
Counsel Ridge No. 11,		Buck Mountain,					Natural,	30,000	32,000	30,000	3	40
Eckley No. 1,		Buck Mountain,					Natural,	14,500	10,000	18,000	3	42
Eckley No. 2,	Luzerne,	Buck Mountain,					Natural,	30,000	4,000	33,000	3	60
Eckley No. 6,		Buck Mountain, Gamma, Wharton,	Guibal,	20	80	.5	Steam,	20,000	22,000	20,000	3	21
Eckley No. 10,		Buck Mountain,					Natural,	16,000	12,000	18,000	4	30
Derringer, Gowan and Tomhicken Colliery:												
Tomhicken,	Luzerne,	Buck Mountain, Mammoth, Wharton, Primrose,	Guibal,	8.6	135	.5	Electricity,	54,000	54,000	54,000	2	45
Deringer,	Luzerne,	Buck Mountain, Mammoth, Gamma, Wharton, Primrose,	Guibal,	20	90	.6	Steam,	66,500	68,000	42,700	8	145
Gowen No. 4,	Luzerne,	Buck Mountain, Mammoth, Gamma, Wharton, Primrose,	Guibal,	16	100	.7	Steam,	68,000	69,000	42,700	8	150
Gowen No. 3,	Luzerne,	Buck Mountain, Mammoth, Gamma, Wharton, Primrose,	Guibal,	20	95	.6	Steam,	54,000	65,000	37,000	7	68
Pardee Brothers and Co., Inc.												
Lattimer Colliery:												
Lattimer No. 8,	Luzerne,	Mammoth, Gamma, Buck Mountain,	Guibal,	4	240		Steam,	20,000	20,000	12,000		57

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Lattimer No. 9,	Luzerne,	Alpha,	Sturtevant,	6	150		Steam,	26,250	11,105	3,476		300
		Alpha,	Sturtevant,	8	200							
		Mammoth,	Stine,	6	460		Steam,	41,690	41,790	9,290	8	40
		Gamma,	Guibal,	16	95	1.6	Steam,					15
Lattimer Nos. 8 and 12,	Luzerne,	Buck Mountain,	Sturtevant,	16	160		Steam,	*	*	*		
		Alpha,	Guibal,	8	150		Steam,	20,700	19,490	12,465	2	48
		Alpha,										
Lattimer No. 22,	Luzerne,	Buck Mountain,	Sturtevant,	6	105		Steam,	12,610	12,535	5,660	2	120
Lattimer No. 20,	Luzerne,	Mammoth,										
		Gamma,										
Lattimer No. 27,	Luzerne,	Buck Mountain,										
		Mammoth,										
Lattimer Nos. 17 and 26,	Luzerne,	Gamma,	Stine,	6	572		Steam,	17,690	21,110	7,050	2	200
		Buck Mountain,	Sturtevant,	6	226		Electricity,					
		Alpha,										
Lehigh Valley Coal Co. Hazleton No. 1 Colliery:												
		Buck Mountain,										
		Gamma,										
		Wharton,										
Hazleton Nos. 1 and 8,	Luzerne,	Mammoth,	Guibal,	20	62	.8	Steam,	80,000	81,000	30,600	10	186
		Primrose,	Guibal,	16	50	.6	Steam,	35,000	36,000	18,900	5	146
		Orchard,										
		Diamond,										
		Tracey,										

*Robbing. No air measurements taken.

Hazleton Shaft Colliery:												
Hazleton Shaft,	Luzerne,	Buck Mountain, Gamma,	Guibal,	20	65	5.5	Steam,	116,000	135,000	40,900	10	201
Hazleton No. 2,	Luzerne,	Wharton,	Guibal,	17	65	5	Steam,	60,400	65,000	40,000	5	85
Hazleton No. 5,	Luzerne,	Mammoth,	Guibal,	14	95	5.5	Steam,	53,600	60,200	45,000	6	122
Stockton No. 2,	Luzerne,	Primrose, Orchard,	Guibal,	20	40	5.5	Electricity,	40,000	40,000	40,000	5	49
Hazleton No. 40,	Luzerne,	Diamond, Tracey,					Natural,	116,000	135,000	40,900	6	39
Upper Lehigh Coal Co.												
Upper Lehigh Colliery:												
Upper Lehigh No. 5,	Luzerne,	Buck Mountain,					Natural,	5,000	5,000	5,000	2	6
Upper Lehigh No. 12,	Luzerne,	Buck Mountain,	Guibal,	5.5	275	1.5	Steam,	22,000	22,000	22,000	3	45
Upper Lehigh No. 15,	Luzerne,	Buck Mountain,	Guibal,	5.5	275	1.5	Steam,	44,000	44,000	30,000	3	42
John S. Wentz and Co.												
Hazle Brook Colliery:												
Hazle Brook No. 1,	Luzerne,	Buck Mountain,					Natural,	30,000	33,000	31,500		24
Hazle Brook No. 5,	Luzerne,	Buck Mountain,					Natural,	30,000	33,000	31,500		29
Hazle Brook No. 10,	Luzerne,	Gamma,					Natural,	10,000	11,350	10,600		2
Hazle Brook No. 14,	Luzerne,	Gamma,					Natural,	8,000	9,000	8,500		10
Hazle Brook No. 16,	Luzerne,	Wharton,					Natural,	30,000	33,000	31,500		20
Hazle Brook No. 17,	Luzerne,	Wharton,	Sturtevant,	7	200	1.6	Steam,	10,000	11,350	10,600		12
Hazle Brook No. 19,	Luzerne,						Natural,	10,000	11,350	10,600		15
Hazle Brook No. 20,	Luzerne,						Natural,	8,000	9,000	8,500		4
S. S. Kemmerer and Co.												
Sandy Run Colliery:												
Sandy Run No. 2,	Luzerne,	Buck Mountain,					Natural,	*				115
Sandy Run No. 5,	Luzerne,	Buck Mountain,					Natural,	*				63
Sandy Run No. 8,	Luzerne,	Wharton,					Natural,	*				12
Harleigh Brookwood Coal Co.												
Harleigh Colliery:												
Spear Point,	Luzerne,	Wharton, Mammoth,					Natural,	16,500	18,500	1,500	1	58
Fish Tail,	Luzerne,	Buck Mountain,	Blackman,	8	225	1.5	Electricity,	30,500	32,000	3,600	1	36
Buck Mountain,	Luzerne,	Buck Mountain,	Guibal,	12	160	1	Steam,	15,900	17,000	2,000	2	30
Wolf Collieries Co., Inc.												
Wolf Colliery:												
Wolf,	Luzerne,	Buck Mountain, Gamma,	Exhaust,	16	90	1.8	Steam,	46,000	48,000	21,200	2	64

*Robbing. No air measurements taken.

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	General Superintendent	Post Office	Superintendent	Post Office	Railroad to Mine
G. B. Markle Co. Jeddo No. 4, and Ebervale, Highland No. 5, Highland No. 2, Jeddo No. 7,	Luzerne,	G. P. Troutman, Assistant General Manager.	Jeddo,			Lehigh Valley
Coxe Brothers and Co., Inc. Drifton Nos. 1 and 2, Eckley and Buck Mountain, Deringer, Gowen and Tomhicken, Eckley Washery,	Luzerne,	Thomas Thomas,	Wilkes-Barre,	W. H. Davies,	Hazleton,	Lehigh Valley
Pardee Brothers and Co., Inc. Lattimer,	Luzerne,	C. Pardee, Jr., President.	Lattimer Mines,			Lehigh Valley
Lehigh Valley Coal Co. Hazleton No. 1, Hazleton Shaft,	Luzerne,	Thomas Thomas,	Wilkes-Barre,	W. H. Davies,	Hazleton,	Lehigh Valley
Upper Lehigh Coal Co. Upper Lehigh,	Luzerne,	T. E. Snyder,	Hazleton,	C. H. Rohland,	Upper Lehigh,	C. R. R. of N. J.
John S. Wentz and Co. Hazle Brook,	Luzerne,	T. E. Snyder, Gen'l Mgr.	Hazleton,	C. H. Rohland,	Upper Lehigh,	Lehigh Valley
M. S. Kemmerer and Co. Sandy Run,	Luzerne,	M. S. Kemmerer,	New York City, 143 Liberty Street.	J. P. Powell,	Sandy Run,	C. R. R. of N. J.
Harleigh Brookwood Coal Co. Harleigh,	Luzerne,	W. G. Thomas,	Frackville,	I. D. Thomas,	Hazleton,	Lehigh Valley
Wolf Collieries Co., Inc. Wolf,	Luzerne,	Joseph G. Sarieks,	Freeland,			Lehigh Valley

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives		
										Pounds of black powder used	Pounds of dynamite used	Pounds of permissible explosives used
G. B. Markle Co.												
Jeddo No. 4 and Ebervale,	Luzerne,	456,678	51,558	2,646	510,882	300	990	3	9	8,775	288,079	
Highland No. 5,		358,174	26,924		385,098	301	494	1	3	2,700	186,784	
Highland No. 2,		214,392	35,214	11,809	261,415	300	472		2	50	97,190	
Jeddo No. 7,		238,019	15,509	28,402	281,930	281	203	2	2		21,718	
Totals,		1,267,263	129,305	42,857	1,439,325		2,159	6	16	11,525	593,771	
Coxe Brothers and Co., Inc.												
Drifton Nos. 1 and 2,	Luzerne,	285,037	65,768	10,269	361,067	276	416	2	13	46,125	64,925	
Eckley and Buck Mountain,		236,149	6,856	8,764	251,769	280	279	2	11	6,750	65,938	
Deringer, Gowen and Tomhicken,		248,139	33,972	1,929	284,040	282	509	1	6	41,075	119,928	
Eckley Washery,			29,037	1,140	30,177	288	20					
Totals,		769,318	135,633	22,102	927,053		1,224	5	30	93,950	250,791	
Pardee Brothers and Co., Inc.												
Lattimer,	Luzerne,	549,625	64,000	6,828	620,453	286	1,059	5	10	2,125	302,053	
Lehigh Valley Coal Co.												
Hazleton No. 1,	Luzerne,	146,067	19,785	60,799	226,651	258	441	3	7	7,175	153,096	
Hazleton Shaft,		231,932	75,365	4,182	311,479	276	778		6	2,700	160,421	
Totals,		377,999	95,150	64,981	538,130		1,219	3	13	9,875	313,517	

TABLE 2—Part 1.—Continued

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives: Pounds of black powder used	Explosives: Pounds of dynamite used	Explosives: Pounds of permissible explosives used
Upper Lehigh Coal Co. Upper Lehigh,	Luzerne,	191,405	26,407	2,197	220,009	287	299			3,400	72,834	
John S. Wentz and Co. Hazle Brook,	Luzerne,	105,852	20,164	925	126,941	228	215		6		50,185	2,775
M. S. Kemmerer and Co. Sandy Run,	Luzerne,	197,037	15,000	1,172	123,209	265	290		10		25,540	
Harleigh Brookwood Coal Co. Harleigh,	Luzerne,	72,494	9,000	1,150	82,644	265	213		1		42,675	
Wolf Collieries Co., Inc. Wolf,	Luzerne,	3,759	4,505		8,264	276	80		1		35,000	
Grand totals,		3,444,752	499,064	142,212	4,086,028		6,758	19	87	120,875	1,686,366	2,775

TABLE 2.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Names of Operators	County	Power Plant										Pumps				Haulage						Air Compressors	
		Boilers				Engines										Number of horses and mules	Locomotives						
		Cylindrical		Tubular		Steam Engines (All Classes)		Internal Combustion Engines (Gas)		Electric Dynamos (All Classes)		Number	Total capacity in gallons per minute	Pumps Delivering Water to the Surface			Gasoline	Steam	Air	Electric		Number	Total capacity cubic feet per minute
		Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total watts kilo-			Number	Approximate number of gallons per minute								
G. B. Markle Co.,	Luzerne,	----	----------	31	10,100	50	7,729	----	----------	6	795	12	15,364	12	12,448	134	----	22	6	14		10	5,622
Coxe Brothers and Co., Inc.,		----	----------	49	9,375	52	4,855	----	----------	2	250	12	13,600	12	8,100	171	----	17	4	1		7	3,250
Pardee Brothers and Co., Inc.		----	----------	12	4,000	27	3,500	----	----------	----	----------	2	2,000	2	1,900	70	----	10	----	3		2	2,380
Lehigh Valley Coal Co.,		----	----------	35	5,300	42	5,525	----	----------	2	300	9	8,400	9	4,200	71	----	6	----	10		----	----------
Upper Lehigh Coal Co.,		----	----------	11	2,480	19	2,181	----	----------	2	175	3	3,200	3	3,200	20	----	7	----	----		1	900
John S. Wentz and Co.,		----	----------	11	1,650	35	850	1	7	----	----------	13	8,500	6	3,500	21	1	3	----	----		2	1,200
M. S. Kemmerer and Co.,		----	----------	4	800	8	446	----	----------	----	----------	2	1,420	2	1,420	29	----	1	----	----		----	----------
Harleigh Brookwood Coal Co		----	----------	4	500	5	300	----	----------	----	----------	6	4,050	6	2,700	19	----	2	----	----		1	175
Wolf Collieries Co., Inc.,		----	----------	3	425	3	175	----	----------	----	----------	3	1,200	2	800	8	----	----	----	----		----	----------
Totals,		----	----------	160	34,720	241	25,561	1	7	12	1,520	62	57,734	54	38,268	543	1	68	10	28		23	13,527

TABLE 3.—Part 1.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside															Total inside	Outside											Total outside	Grand total inside and outside
		Mine foremen	Assistant mine foremen	Fire bosses	Miners	Miners' laborers	Machine miners	Machine runners and scrapers	Drivers and runners	Motormen and assistants	Doorboys and helpers	Trackmen and trattiemen	Timbermen and rockmen	Pumpmen and pipemen	Electricians and helpers	All other employes		Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Machinists and helpers	Trackmen and helpers	Slate pickers (boys)	Slate pickers (men)	Office employes	All other employes			
G. B. Markle Co.,	Luzerne,	8	14	5	545	382	----	----	62	53	31	48	110	15	3	147	1,423	1	4	44	72	4	17	62	14	10	508	736	2,159
Coxe Brothers and Co., Inc.,		10	16	----	485	88	----	----	87	14	2	39	50	14	1	35	841	----	9	39	89	10	10	6	----	10	216	383	1,224
Pardee Brothers and Co., Inc.,		2	13	1	505	198	----	----	36	6	3	34	55	----	2	15	780	1	2	31	47	15	10	12	1	14	146	279	1,059
Lehigh Valley Coal Co.,		9	19	----	416	129	----	----	32	26	12	22	52	6	7	59	789	----	3	52	61	18	3	43	11	9	230	430	1,219
Upper Lehigh Coal Co.,		1	2	----	46	34	----	----	9	----	----	3	1	4	----	9	109	1	1	15	39	7	7	12	3	3	102	190	299
John S. Wentz and Co.,		1	2	----	63	19	----	----	14	----	----	4	4	5	----	10	128	----	1	6	22	4	2	10	2	2	38	87	215
M. S. Kemmerer and Co.,		1	2	----	43	33	----	----	14	----	6	4	44	3	----	40	190	1	1	8	14	3	2	15	33	2	21	100	290
Harleigh Brookwood Coal Co.,		1	3	----	49	43	----	----	9	----	----	----	6	4	1	28	144	1	2	8	8	----	2	16	6	1	25	69	213
Wolf Collieries Co., Inc.,		1	1	----	40	13	----	----	3	----	1	2	----	4	----	1	66	1	1	2	5	----	----	----	----	1	4	14	80
		34	72	6	2,192	849	----	----	266	99	55	156	322	55	14	350	4,470	6	24	205	357	61	53	176	70	52	1,284	2,288	6,758

TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Total
G. B. Markle Co.,	Luzerne,	25	25	27	22	22	25	25	26	25	25	24	25	296
Coxe Brothers and Co., Inc.,		22	23	25	16	26	25	25	25	21	24	24	23	279
Pardee Brothers and Co., Inc.,		23	23	25	21	24	25	24	26	25	24	24	22	286
Lehigh Valley Coal Co.,		20	21	24	16	24	23	23	24	21	23	24	23	266
Upper Lehigh Coal Co.,		25	26	27	15	19	22	23	27	25	27	25	26	287
John S. Wentz and Co.,		17	17	17	14	19	22	19	21	22	22	19	19	228
M. S. Kemmerer and Co.,		22	24	21	21	22	22	19	22	21	23	23	25	265
Harleigh Brookwood Coal Co.,		22	22	23	15	25	23	23	23	22	20	23	24	265
Wolf Collieries Co., Inc.,		20	21	24	16	25	25	23	25	23	24	24	26	276

TABLE 4.—Fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 3	Julian Shamboliskie,	Russian,	Miner,	40	S.			Jeddo No. 4,	Luzerne,	Instantly killed by fall of slate at face of robbing.
13	Eugene Finch,	American,	Miner,	55	S.			Lattimer,		Suffocated by gas while making examination of holes to extinguish mine fire which started December 13, 1915.
13	Cornelius Hanley,	American,	Laborer,	21	S.			Lattimer,		Suffocated by gas while making examination of holes to extinguish mine fire which started December 13, 1915.
20	George Petrilcak,	American,	Patcher,	21	S.			Highland No. 5,		Instantly killed by falling under motor on gangway.
Feb. 14	Mike Cerobecca,	Hungarian,	Jackman,	52	M.	1	2	Jeddo No. 7,		Instantly killed. Crushed by a rock that rolled down stripping bank. Outside.
Mar. 3	Robert Michael,	American,	Patcher,	22	S.			Deringer,		Instantly killed. Caught between door and car at mouth of tunnel.
17	Gabriel Gabose,	Austrian,	Miner,	37	M.	1	4	Lattimer,		Instantly killed. Washed down chute by rush of water from an old gangway above.
April 28	Mike Middlick,	Russian,	Laborer,	57	M.	1		Drifton No. 1,		Suffocated by rush of rice coal which he was engaged in loading to be sent to another slope for the boilers. Outside.
June 7	Frank Teaberry,	Italian,	Miner,	53	M.	1		Hazleton No. 1,		Instantly killed by explosion of dynamite while charging hole in cross-cut.
July 18	Chaser Dipisso,	Italian,	Laborer,	26	S.			Lattimer,		Instantly killed. Caught by machinery in breaker. Outside.
22	Frank Zarambo,	Polish,	Miner,	31	M.	1	5	Lattimer,		Instantly killed by falling down manway of breast.
27	Peter Lemma,	Slavonian,	Miner,	50	M.	1	2	Drifton No. 1,		Instantly killed by fall of coal at face of robbing.
Aug. 11	Michael Polobinskie,	Polish,	Laborer,	37	M.	1	1	Jeddo No. 4,		Instantly killed by rush of slate at face of robbing on gangway.
24	Andrew Patskan,	Slavonian,	Laborer,	39	M.	1	6	Jeddo No. 4,		Instantly killed by fall of coal at face of breast.
Sept. 6	Simon Cruluvish,	Lithuanian,	Miner,	43	M.	1		Hazleton No. 1,		Fatally injured by rush of coal in battery.
12	John Wislotski,	Austrian,	Miner,	42	M.	1	2	Hazleton No. 1,		Instantly killed by fall of slate at face of pillar robbing.

Oct.	7	Valentine Shalkosky,	Polish,	Miner,	36	M.	1	5	Eckley,	Luzerne,	Drowned by falling through a hole in the bottom of the gangway into old workings.
	10	Wassyl Polotosh,	Slavonian,	Jackman,	31	S.			Eckley,		Instantly killed. Caught between steam shovel and side of bank when jack broke into old workings below. Outside.
Nov.	28	David Benjamin,	Hebrew,	Contractor,	53	M.	1	3	Jeddo No. 7,		Instantly killed by falling in front of locomotive. He was thrown from a horse, injuring his head, while making his rounds about the stripping operations. It was suggested that he take a locomotive and ride to the hospital to be treated, but he got on the bumpers and while riding he fainted and fell in front of locomotive. Outside.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 14	John Garnal,	Slavonian,	Miner,	36	M.	Drifton,	Luzerne,	Hand cut by sheet iron that slipped through his fingers.
17	Charles Dreisbach,	American,	Engineer,	41	S.	Drifton,		Leg bruised by slipping and falling against concrete wall. Outside.
22	John Moran,	American,	Driver,	19	S.	Lattimer,		Chest injured and cheek lacerated. Caught between car and rib near bottom of slope.
25	Warren Young,	American,	Driver,	21	S.	Eckley,		Finger injured. Kicked by mule.
28	Joseph Haladick,	American,	Patcher,	18	S.	Lattimer,		Finger fractured. Caught between box and car. Outside.
Feb. 7	John Jacket,	Italian,	Miner,	48	M.	Hazleton Shaft,		Hip bruised by fall of coal at face of breast.
8	Michael Rovisky,	American,	Jig runner,	18	S.	Eckley,		Arm fractured. Caught by machinery. Outside.
10	Anthony Stapinski,	Polish,	Topman,	30	S.	Eckley,		Finger crushed. Run over by car. Outside.
21	George Bilkin,	Slavonian,	Laborer,	54	M.	Eckley,		Ribs bruised. Struck by piece of coal. Outside.
28	Patrick Ferry,	Irish,	Miner,	40	S.	Drifton,		Hand cut. Struck by ax while bracing a set of timber.
Mar. 1	Harvey Roberson,	American,	Miner,	32	M.	Deringer,		Hand punctured by stick while making a hole in a stick of dynamite for cap.
2	Henry Coleman,	American,	Patcher,	21	S.	Hazleton Shaft,		Chest squeezed. Caught between car and hand dump. Outside.
5	George Beaton,	Slavonian,	Laborer,	40	M.	Jeddo No. 4,		Leg fractured. Struck by timber. Outside.
7	Jake Rinker,	American,	Driver,	36	M.	Hazleton No. 1,		Pelvis injured. Caught between car and prop on gangway.
14	Raymond Nagle,	American,	Carpenter,	22	S.	Drifton,		Nose fractured by falling against boiler. Outside.
16	Seiffried Auger,	Italian,	Slatepicker,	18	S.	Harleigh,		Hand injured. Struck by piece of coal. Outside.
17	Epifania Enama,	Austrian,	Miner,	27	M.	Lattimer,		Body lacerated. He was washed down chute by rush of water from old gangway above.

Mar.	23	George Kollesser,	American,	Laborer,	60	M. Hazle Brook,		Hips bruised. Caught between car and timber on gangway.
	28	Patrick Carr,	American,	Runner,	50	S. Drifton,		Leg fractured. Caught between derailed cars on gangway.
April	10	John Stefanko,	Slavonian,	Laborer,	60	M. Eckley,		Rib fractured and slight abraisions of leg by rush of bank. Outside.
		Joseph Sweder,	Slavonian,	Laborer,	40	M. Eckley,		Small bone in foot fractured by rush of bank. Outside.
	12	John Matchkunas,	Polish,	Miner,	40	M. Highland No. 5,		Finger crushed. Caught between car and rail.
	18	John Nelk,	American,	Carpenter,	48	M. Hazleton No. 1,		Ribs fractured by falling in tank. Outside.
	26	Charles Zola,	Polish,	Miner,	32	M. Lattimer,		Face and hands burned by explosion of gas in chute.
May	8	Andrew McNamee,	American,	Laborer,	48	S. Drifton,		Ankle fractured. Struck by rail on gangway.
	12	John Zopack,	Austrian,	Miner,	35	M. Lattimer,		Leg fractured by fall of coal on gangway.
	13	Michael Kundro,	Slavonian,	Driver,	21	S. Eckley,		Pelvis bruised. Caught between car and rib on gangway.
	15	Ralph Merollo,	Italian,	Laborer,	57	M. Lattimer,		Eye injured. Struck by piece of coal in breaker. Outside.
	16	Patrick McFadden,	American,	Laborer,	38	S. Sandy Run,		Leg fractured by fall of slate on gangway.
		Dominick Rovat,	Italian,	Miner,	30	M. Hazle Brook,		Eye injured. Struck by piece of coal at face of breast.
		Mike Timko,	Slavonian,	Miner,	43	M. Deringer,	Luzerne,	Leg fractured, shoulder bruised and head injured by fall of coal in stripping. Outside.
	17	Adam Kordolaski,	Russian,	Miner,	29	M. Hazleton Shaft,		Body squeezed by fall of slate at face of breast.
June	2	John Brozinski,	Russian,	Miner,	35	M. Hazleton No. 1,		Face and hands burned by explosion of gas.
	9	John Klevon,	Hungarian,	Miner,	38	M. Drifton,		Ankle fractured by fall of rock on gangway.
	20	Toney Scoboletti,	Italian,	Miner,	28	M. Lattimer,		Leg injured by rush of rock from side of gangway.
	30	Jacob Shellhamer,	American,	Miner,	45	M. Jeddo No. 4,		Head lacerated by fall of coal on gangway.
		Steve Seripko,	Slavonian,	Laborer,	49	M. Highland No. 5,		Clavicle fractured by railroad cars. Outside.
July	6	Mike Dromnick,	Hungarian,	Miner,	29	M. Drifton,		Pelvis fractured and head cut by rush of coal from face of breast.
	10	Walter Vatrich,	Russian,	Laborer,	30	M. Hazleton Shaft,		Leg fractured by fall of coal at face of breast.
	18	Andrew Onifer,	Slavonian,	Doorboy,	17	S. Jeddo No. 4,		Leg fractured. Caught by cars on gangway.
	22	William Webster,	American,	Miner,	51	M. Deringer,		Knee cap dislocated and arm badly lacerated. Struck by prop at face of breast.

TABLE 5.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
July 25	John McHugh,	American,	Laborer,	55	M.	Eckley,	Luzerne,	Knee lacerated. Struck by piece of coal. Outside.
Aug. 1	George Bechloft,	American,	Laborer,	55	M.	Sandy Run,		Finger crushed. Caught between prop and side of chute.
7	Henry Gusetti,	Italian,	Miner,	32	M.	Sandy Run,		Collar bone fractured. Caught between car and prop on gangway.
	James McAlerney,	American,	Patcher,	16	S.	Lattimer,		Leg lacerated. Dragged by cars. Outside.
11	Michael Ostry,	Polish,	Miner,	30	M.	Jeddo No. 4,		Leg fractured by rush of slate at face of robbing on gangway.
25	Joseph Tomcko,	Slavonian,	Laborer,	31	M.	Eckley,		Arm fractured and wrist lacerated by fall of coal at face of breast.
29	Clifford Falatko,	Hungarian,	Runner,	21	S.	Eckley,		Leg fractured. Caught by cars on gangway.
Sept. 9	John Beechey,	American,	Patcher,	20	S.	Hazle Brook,		Hips bruised. Caught between car and prop on gangway.
11	James J. McNelis,	American,	Shipper,	50	S.	Lattimer,		Ankle fractured by falling from railroad car. Outside.
12	John Fechkanin,	Russian,	Driver,	41	M.	Drifton,		Leg bruised. Caught by cars on gangway.
13	Andrew Curney,	Hungarian,	Laborer,	42	M.	Jeddo No. 4,		Ribs fractured. Struck by iron bar. Outside.
	Mathew Welsh,	Irish,	Machinist,	58	M.	Drifton,		Compound fracture of leg and both legs scalded by the bursting of steam pipe. Outside.
	Stanley Bittner,	American,	Patcher,	20	S.	Jeddo No. 7,		Skull fractured. Struck by railroad cars. Outside.
14	Michael Lynn,	Polish,	Miner,	50	M.	Drifton,		Eye injured. Struck by piece of coal while making hitch for prop.
15	John Nowak,	Polish,	Miner,	40	M.	Wolf,		Collar bone fractured by fall of rock in breast.
	Jacob Prokonovich,	Hungarian,	Ashman,	43	S.	Highland No. 2,		Ankle fractured by falling while pushing car. Outside.

Sept.	20	Wassil Houdock,	Slavonian,	Miner,	40	M. Hazle Brook,		Leg fractured by fall of roof on gangway.
		John Knap, Jr.,	Slavonian,	Doorboy,	17	S. Jeddo No. 4,		Arm fractured. Struck by car on gangway.
	26	Luka Kalugerovici,	Montenegrin.	Laborer,	43	M. Hazleton Shaft,		Leg lacerated by sheet iron.
Oct.	2	Peter Klopinskie,	Polish,	Miner,	50	M. Hazle Brook,		Head lacerated by explosion of dynamite while tamping hole in counter gangway.
	16	Frank Positania,	Italian,	Runner,	23	S. Jeddo No. 4,		Compound fracture of tibia and fibula. Knocked off railroad car. Outside.
	23	John H. O'Donnell,	American,	Engineer,	60	M. Drifton,		Lower part of abdomen injured while throwing reverse bar of breaker engine. Outside.
	24	Jeremiah Shuman,	American,	Fireman,	38	M. Deringer,		Thumb severed. Caught by machinery. Outside.
	25	Chas. Landmesser,	American,	Shifter,	27	S. Highland No. 2,		Toes crushed. Caught by cars. Outside.
	27	George Boganskie,	American,	Slatepicker,	16	S. Hazle Brook,		Eye burned by coming in contact with steam pipe in breaker. Outside.
		David Harris,	American,	Electrician,	27	S. Hazleton No. 1,		Finger fractured. Caught in drill press. Outside.
Nov.	3	John Curran,	American,	Roadman,	54	M. Drifton,		Hand lacerated. Caught in spoke of wagon wheel and bolster. Outside.
	7	Peter Baran,	Slavonian,	Hitcher,	19	S. Sandy Run,		Head squeezed and face cut. Caught between cars at bottom of breaker plane. Outside.
	8	Anthony Gusta,	Slavonian,	Miner,	40	M. Sandy Run,	Luzerne,	Hand injured by coming in contact with nail in chute.
	9	John Fortuna,	Slavonian,	Miner,	48	M. Hazleton Shaft,		Knee injured by fall of coal from high side of cross-cut.
	11	Jacob Warl,	Austrian,	Driver,	38	M. Deringer,		Collar bone fractured. Struck by cars. Outside.
	17	William Singley,	American,	Miner,	29	M. Hazleton No. 1,		Knee injured by falling against piece of rock.
	18	John Ursta,	Austrian,	Laborer,	32	M. Highland No. 5,		Finger crushed. Caught between rail and side of cross-cut.
	23	John Krevitskie,	Russian,	Laborer,	33	M. Jeddo No. 4,		Rib fractured by fall of slate in breast.
	27	George Hudock,	Hungarian,	Miner,	46	M. Lattimer,		Ankle fractured by fall of rock on gangway.
	28	Harry Benjamin,	American,	Foreman,	26	M. Jeddo No. 7,		Seriously injured by falling off locomotive. Outside.
		Elmer Anthony,	American,	Blacksmith,	50	M. Sandy Run,		Hand punctured by piece of iron, which flew from the anvil while working in the shop. Outside.
Dec.	2	Mike Birrosh,	Slavonian,	Miner,	57	M. Jeddo No. 4,		Compound fracture of finger. Caught between two sticks of timber.
	9	Joseph Shedorick,	Polish,	Miner,	32	M. Eckley,		Collar bone and jaw fractured. Caught between derailed cars and prop on gangway.

TABLE 5—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Dec. 13	Charles Fisher,	American,	Patcher,	19	S.	Deringer,	Luzerne,	Collar bone fractured. Caught between car and timbers on gangway.
16	Alex Mehalick,	Slavonian,	Miner,	40	M.	Sandy Run,		Back and head injured by fall of coal in breast.
18	John Beaver,	German	Sawer,	54	S.	Sandy Run,		Back and hip injured. Struck by timber. Outside.
26	Edward Hill,	Irish,	Engineer,	74	M.	Sandy Run,		Rib fractured by falling in engine house. Outside.
27	Hugh McGee,	Irish,	Slatepicker,	74	M.	Hazleton No. 1,		Toe fractured by railroad car. Outside.
28	John Kruell,	Hungarian,	Miner,	32	M.	Sandy Run,		Scalp lacerated by fall of coal at face of gangway.
29	Mike Ginawiz,	Russian,	Miner,	32	M.	Hazleton No. 1,		Finger bruised. Struck by piece of coal.

CONDITION OF COLLIERIES

G. B. MARKLE COMPANY

Jeddo No. 4 Colliery.—Jeddo No. 4 slope, Jeddo No. 4 shaft and Ebervale slope—Ventilation, roads, drainage and condition as to safety, good.

Jeddo No. 7 Colliery.—No. 3 and Wharton slopes: Ventilation, roads, drainage and condition as to safety, good.

Highland Nos. 2 and 5 Collieries.—Ventilation, roads, drainage and condition as to safety, good.

COXE BROTHERS AND COMPANY, INCORPORATED

Drifton, Deringer, and Eckley Collieries.—Ventilation, roads, drainage and condition as to safety, good.

LEHIGH VALLEY COAL COMPANY

Hazleton No. 1 and Hazleton Shaft Collieries.—Ventilation, roads, drainage and condition as to safety, good.

PARDEE BROTHERS AND COMPANY, INCORPORATED

Lattimer Colliery.—Ventilation, roads, drainage and condition as to safety, good.

UPPER LEHIGH COAL COMPANY

Upper Lehigh Colliery.—Ventilation, roads, drainage and condition as to safety, good.

J. S. WENTZ AND COMPANY

Hazle Brook Colliery.—Ventilation and condition as to safety, good. Roads and drainage, fair.

M. S. KEMMERER AND COMPANY

Sandy Run Colliery.—Ventilation and condition as to safety, good. Roads and drainage, fair.

HARLEIGH BROOKWOOD COAL COMPANY

Harleigh Colliery.—Buck Mountain and Fish Tail Slopes. Ventilation, roads, drainage and condition as to safety, good.

Spear Point Slope.—Ventilation and condition as to safety, good. Roads and drainage, fair.

WOLF COLLIERIES COMPANY

Wolf Colliery.—Slopes Nos. 5 and 6. Ventilation, roads and drainage and condition as to safety, good.

IMPROVEMENTS

G. B. MARKLE COMPANY

Jeddo No. 7 Colliery.—The Wharton slope was extended 217 feet during the year, a turnout made on the first lift, and an electrically driven triplex pump, 3½ by 4 inches installed for sinking purposes.

An air shaft was sunk from the surface to the Wharton slope airway.

An overcast was built in Slope No. 1, Tunnel "D," East Wharton gangway.

A rock hole was driven from the Wharton vein to the Mammoth stripping.

A set of compound geared rolls was installed in the breaker. A Barley coal pocket was built on the west side of the breaker. Three stove coal and 3 nut coal jigs were installed in breaker. A 60-foot light railroad car scale was installed east of breaker.

The wagon road from the breaker to the township road was paved with Belgian block.

The stripping operations were continued throughout the year, 336,637 cubic yards of rock being removed.

Ebervale Colliery.—The 6-inch water line leading from the South reservoir across the basin was removed to the wagon road, to permit of stripping operations. The west flume was entirely rebuilt. A new hot water generator, with automatic regulator, was installed in the wash-house.

Erected a mine timber yard, consisting of mechanical devices for unloading and cutting mine timber. Built a saw mill to cut up old timber from the mines.

The No. 5 stripping was continued during the year with nine steam shovels and twenty-eight locomotives. The Primrose fan was torn down and a larger one is being built to replace this fan and the No. 3 Mammoth fan, which must be removed to permit the extension of No. 5 stripping. A rock hole for ventilation purposes is being driven from the Mammoth to the Primrose vein.

Jeddo No. 4 Colliery.—A rock hole 46 feet long was driven from East Gangway B Lower Orchard to the Upper Orchard.

A rock hole 21 feet long was driven from West Gangway E, Lower Orchard to the Upper Orchard.

No. 12 slope, near machine shops, was driven 390 feet in the Wharton vein; 15 by 16 inch second motion engines were erected and corrugated iron engine house built.

Flushing is being continued in the Mammoth and Wharton veins.

Mule haulage on Tunnel D, east, was replaced by electric motors.

The stripping of the South Wharton basin was completed, a total of 585,298 cubic yards of overburden having been removed.

Stripping operations were commenced on the North crop of the Wharton vein west of Jeddo No. 4 breaker.

A steam cylinder was erected in the breaker for operating the rock gate for loading rock into dump cars. A barrel feed regulator was built on the dump in the breaker. A Rice coal jig was installed in the breaker.

The old colliery office was moved to a location between the washhouse and warehouse, and remodeled for use as a hose-house.

A grading was made and tracks laid east of the breaker to increase the loaded stand room.

To permit of stripping operations, the light stand tracks were moved north from the old location, a 60-foot light scale erected and the system connected to the old tracks at breaker.

The 6-inch steam line leading from the boiler house to Jeddo No. 4 shaft was removed from the site of the stripping and erected south of the south limit of the stripping.

The fan on old Jeddo No. 3 slope was removed, and a new one 16 by 4 feet 6 inches, direct connected to a 12 by 18 inch steam engine, was erected on the Primrose vein south of Jeddo No. 4 breaker.

The saw mill was removed and erected at Ebervale.

The loading up of the slate banks west of the breaker was finished.

The frame boiler feed pump room was replaced with a fire-proof room made of brick and steel.

Highland No. 5 Colliery.—A 3,000 H. P. Cochrane boiler feed water heater was installed in the boiler house.

The breaker was equipped throughout with steam heat.

One shower, four new enamel washstands, and a new hot water generator with thermostat regulator, were installed in the washhouse.

The north side boiler-house wall was rebuilt of concrete, and concrete wing walls built to add to the coal-storage room.

The ground was graded, retaining walls built, and ditches made and paved around the breaker.

A proving hole was sunk in the Buck Mountain tunnel H East gangway, and preparations made to convert it into a slope.

A telephone was installed on Tunnel O turnout.

Mule haulage on East Gangway F. Plane J, was replaced with electric motors.

The wooden overcast on Plane A was replaced with one made of brick and cement.

Highland No. 2 Colliery.—The west side of the breaker was completed and put into operation.

A fire spray system was installed in the breaker.

A second unit was added to the power plant.

A 60 foot light car scale was installed and the necessary track changes made.

The top of No. 1 slope was remodeled, a change to a back-switch head being made necessary by the robbing operations.

The fan that was located west of No. 1 slope was removed, owing to the exhaustion of the coal.

A 10 by 18 inch Simplex electric pump was installed in Slope D, to replace the steam pump.

Highland No. 6 Slope.—An isolated pump room, 15 by 52 feet, was made in the bottom rock of the Alpha vein, the side walls being made of concrete and the roof a concrete arch.

The pump room is sealed off from the rest of the mine by a steel water-tight door.

A 12 inch and 23 by 14 by 36 inch compound duplex Goyne pump, having a capacity of 2,500 gallons per minute was installed, together with the necessary steam and column lines.

A tunnel 22 feet long was driven to connect the old pump room at the foot of No. 6 slope to the gangway leading to the new pump room. The piping in the boiler house was changed to permit of increasing the steam pressure.

COXE BROTHERS AND COMPANY, INCORPORATED

Drifton Colliery.—The Old breaker was remodeled, and the new breaker, which has a daily capacity of 2,500 tons, was completed.

A new fireproof hoisting engine house and a new fireproof breaker engine house were erected.

Installed a new Vulcan compound breaker engine; also a new air compressor in the Tender Slope engine house for the purpose of furnishing air for the pumping of the artesian wells.

A new concrete and brick bulk-head was started at the boiler house.

Slope No. 1: A new powder house was built. A new 8 by 16 rock plane, 190 feet long, was driven to the South pitch of the Wharton vein, and will ultimately develop the Mammoth vein also, which is virgin in this territory.

The first 70 feet of manway was concreted. The George Moore tract has had 1,200 feet of gangway reopened and retracked for robbing purposes.

Slope No. 2: A new Rock slope was completed from the Gamma vein to the Mamomth stripping along the boundary pillar between Drifton and Lattimer. The grading at the foot of the slope for turnouts, etc., necessitated the removal of 1,400 cubic yards of rock. This slope is a single track slope, 8 feet by 12 feet by 108 feet long and provides an outlet for all the coal of the Western end of the property. After being hoisted at this slope coal will go over-ground to Drifton No. 2 breaker to be prepared.

Slope No. 9: The installation of an electrically driven hoist was commenced.

Eckley Colliery.—A new 4-inch steam line was erected from Slope No. 6 to No. 6 fan, and a new 3-inch steam line from No. 6 fan to No. 6 Inside slope. The line furnishes power for inside hoisting engine and pump.

A new coal conveyor line was installed at the washery, and a new ash pocket and bulk-head erected at the boiler house.

Slope No. 1: An 8 by 12 Rock tunnel was started through a saddle in the Buck Mountain vein and driven 90 feet. This tunnel, when completed, will tap a small local basin of Buck Mountain coal and will provide a haulage-road for this coal to the foot of No. 1 Inside slope.

No. 1 tunnel started at Council Ridge in 1915 was completed to a point 1,465 feet from the mouth. This tunnel will eventually afford an outlet for the 3rd, 4th and 5th Section strippings, in addition to developing a 4-foot virgin vein that underlies the Buck Mountain vein. It will also afford a water course for all drainage above, elevation 1,477.

Slope No. 11: A concrete First Aid room was erected.

No. 6 Stripping: A 1½-inch wrought iron water pipe line, 800 feet long, has been constructed from the main Porter Swamp pipe line to the strippings for the purpose of supplying water for steam shovels and locomotives.

At the several Strippings at this colliery 542,929 cubic yards of clay and rock have been excavated during the year.

Deringer Colliery.—The mouth of the main drift and the mouth of the Wharton fan-way were concreted.

An 8 by 16 Rock plane was driven from the Top Split Gamma vein to the basin of the Wharton vein for the purpose of developing the virgin coal in this basin.

A medical room at Gowen No. 3 was remodeled.

The mouth of the Creek tunnel was concreted as far as the solid rock.

Tomhicken.—An 8 by 12 tile pump-house was erected and a 19 by 23 tile washhouse built.

A 10-ton electric motor was installed to replace the steam locomotive previously used along the inside main haulage-road.

Repaired 7,000 feet of track and bonded rails.

Installed 15,000 feet of wire for the purpose of extending the electric haulage system. A small tunnel, 6 by 8 by 23 feet long, was driven from the Wharton to the Mammoth vein for the purpose of ventilating No. 8 Slope workings.

LEHIGH VALLEY COAL COMPANY

Hazleton No. 1 Colliery.—A brick addition, 12 feet by 23 feet, was added to the sub-station and a 200 kilowatt generator installed.

Electric lights have been installed in the Breaker engine house, replacing oil lamps.

A steam radiator was placed in the ambulance shed.

The fresh water dam was drained and cleaned. The colliery water meter was inclosed by concrete walls and a wooden top.

No. 8 Slope: Steel mine supports to replace those of wood were put in the East Turnout foot of No. 8 slope and in the North tunnel at the Gamma vein.

A rock tunnel and rock plane, 8 feet by 15 feet by 187 feet long, was driven from the 3rd level West Wharton "B" gangway to the Mammoth vein basin, No. 6 stripping.

No. 1 Slope: A rock tunnel, 8 feet by 12 feet by 101 feet long, was driven from Primrose to the Mammoth vein on the 5th level.

A rock tunnel, 8 feet by 12 feet by 136 feet long, is being driven from the Buck Mountain East gangway to the Gamma vein, 8th level; also one 8 feet by 12 feet by 176 feet long from the Buck Mountain West gangway to the Wharton vein, 8th level; and one 8 feet by 12 feet by 224 feet long from the Wharton to the Gamma, on the 4th level.

Hazleton Shaft Colliery.—A small Goyne single plunger pump was placed in the breaker to help feed breaker water. A spray system for fighting fires was installed in the breaker.

A rock tunnel, 8 feet by 12 feet by 87 feet long, was driven from the Wharton vein, North dip, West gangway "E," head of plane, to the Mammoth vein basin, No. 5 North Stripping.

No. 3 Slope: Rock tunnels were driven as follows: One 8 feet by 12 feet by 111 feet long, from the 3rd level, South dip, East Orchard dip gangway, to the Diamond vein; one 8 feet by 12 feet by 59 feet long, from the 2nd level, South dip, East Wharton gangway at breast No. 15, to the Mammoth vein, and one 8 feet by 12 feet by 57 feet long, from the 2nd level, South dip, East Wharton gangway at breast No. 30, to the Mammoth vein.

No. 5 Slope: Rock tunnels are being driven as follows: One 8 feet by 12 feet by 229 feet long, south along the Western barrier pillar line from the face of the 3rd level, South dip, West Buck Mountain gangway, to the Gamma vein; and one 8 feet by 12 feet by 269 feet long, north from a Slant gangway in the 3rd level, West Buck Mountain gangway, to the Gamma vein basin.

Stockton No. 2 Slope: The East turnout at the present working level was lengthened to hold 24 cars, so as to increase the motor haulage trips from No. 7 Stockton workings.

In the East Wharton, North dip gangway, breast No. 17 was driven to the surface for the purpose of ventilating the Wharton workings.

From the Hazleton No. 5 North Stripping 108,059 cubic yards of overburden were removed.

Stockton No. 7: A 3½ by 14 foot concrete motor pit was constructed for the purpose of repairing the inside electric motors.

PARDEE BROTHERS AND COMPANY, INCORPORATED

Lattimer Colliery.—Lattimer: No. 20 slope has been extended in the top split of the Buck Mountain vein a distance of two hundred and seventy feet to the basin, and a gangway started east in the basin.

Tunnels have been driven as follows: One 6 feet by 9 feet by 143 feet long, south from the East gangway in the second split of the Buck Mountain vein one hundred and sixty feet east of Slope No. 20, and a diamond drill bore hole was drilled south horizontally a distance of fifty-two feet from the face of the tunnel.

One 7 feet by 11 feet by 25 feet long from the first to the second split of the Buck Mountain vein on the west side of Slope No. 8.

One 7 feet by 11 feet by 60 feet long, north from the Gamma to the Mammoth vein in line with Slope No. 27, to connect with a manway and timberway being driven up from the basin of the Mammoth vein.

One 7 feet by 11 feet by 80 feet long, south from the Mammoth to the Gamma vein in No. 10 counter about 100 feet east of No. 12 slope.

One 7 feet by 11 feet by 30 feet long, from the No. 2 West Buck Mountain gangway in the top split to the West Buck Mountain gangway in the second split.

One 7 feet by 11 feet by 65 feet long, from the No. 2 West Buck Mountain gangway in the second split north to the Alpha vein.

A rock hole, 5 feet by 6 feet by 45 feet long, has been driven from the drainage tunnel north to the Buck Mountain vein just outside of the Milnesville Branch.

A rock hole, 5 feet by 6 feet by 34 feet long, has been driven north from the West Gamma gangway Slope No. 9 to the Mammoth vein.

A six-foot skip has been taken off the small tunnel leading from No. 2 West Gamma gangway to the Buck Mountain vein at the motor-house, which is now being used for transportation.

Fire in No. 9 slope was officially declared "out" on January 11, 1916.

Discontinued using No. 3 Breaker for the preparation of fresh mine coal on January 4, 1916. On this date No. 5 Breaker was put in full operation and has given very good results during the year.

Lattimer Colliery.—Lattimer Outside: The 36 by 20 by 66-inch breaker water pump at No. 3 has been removed and added to the equipment at No. 5 breaker and the pump-house enlarged to accommodate same.

An old 18 by 12 by 48-inch breaker water pump has been added to the equipment at No. 3 washery.

A new steel building 14 by 18 feet has been erected for the purpose of storing dynamite.

A new wash-house 14 by 18 feet has been erected at the top of No. 20 slope.

A new 30-foot addition has been built to the locomotive house at No. 5 breaker.

About 800 feet of 4-inch steam pipe leading to No. 27 slope have been removed and replaced with 6-inch pipe.

The old 17 by 24-inch hoisting engine at the top of No. 12 slope has been replaced with a similar engine on a reinforced concrete foundation, and a new engine-house erected over the same.

A concrete foundation has been laid under the 17 by 24-inch hoisting engine at the head of No. 27 slope.

Lattimer Colliery.—Milnesville: No. 26 slope has been extended five hundred and thirty feet in rock during the year.

The drainage tunnel has been extended two hundred and fifty feet.

A rock-hole, 6 feet by 8 feet by 190 feet long, was driven from the drainage tunnel north on a pitch of thirty-two degrees, to the basin of the Wharton vein.

A tunnel, 6 feet by 8 feet by 75 feet long, was driven north from the above rock-hole to the Gamma vein, in which vein a hole is being driven to No. 9 level for drainage purposes.

An airshaft, 7 feet by 7 feet by 10 feet deep, was sunk to the face of Breast No. 6 on the East Alpha gangway on the south dip at Milnesville shaft, and the six-foot diameter disc Stine fan moved from the Stripping to this point.

An airway and manway, 6 feet by 8 feet by 50 feet long, was sunk to the face of Breast No. 11 on the West South dip gangway in the top split of the Buck Mountain vein at Milnesville shaft, and the six-foot diameter Sturtevant fan removed from the top of No. 26 Slope and installed in this airway.

A fifteen-foot addition has been built to the wash-house at the top of the Milnesville shaft.

A new head frame and pocket has been built at the top of No. 26 Slope.

An air shaft 6 feet by 6 feet by 16 feet deep has been sunk to the face of Breast No. 35 on the West gangway in the second split of the Buck Mountain vein, Slope No. 20.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held at the Young Men's Christian Association Building, Hazleton, June 6 and 7. The Board of Examiners was composed of David J. Roderick, Mine Inspector, Hazleton; Charles H. Rohland, Superintendent, Upper Lehigh; James North, Miner, Drifton; John O'Hara, Miner, Hazleton.

The following persons passed a satisfactory examination and were granted certificates:

MINE FOREMEN

Joseph Lawrence, Samuel Martinovitch, Tomhicken; Joseph C. Fellin, Fern Glen, William Spaide, Jeddo; Walter Cherehowski, Freeland; John C. Somers, Walter O. Gardner, Lattimer; Frank Fay, Eckley; Morgan W. Price, Patrick J. Sharkey, Hazleton.

ASSISTANT MINE FOREMEN

Leo Poncari, Fern Glen; John Mealing, Freeland.

SIXTEENTH DISTRICT

LUZERNE, CARBON, SCHUYLKILL AND COLUMBIA COUNTIES

Hazleton, Pa., February 23, 1917.

Hon. James E. Roderick, Chief of Department of Mines.

Sir: I have the honor to transmit herewith my annual report as Inspector of Mines for the Sixteenth Anthracite District, for the year ending December 31, 1916.

Respectfully submitted,

J. J. STICKLER,
Inspector.

38—3—1916

SUMMARY OF STATISTICS

Number of collieries,	13
Number of mines,	57
Number of mines in operation,	57
Number of gaseous mines in operation,	15
Number of non-gaseous mines in operation,	42
Number of tons of coal shipped to market,	2,619,360
Number of tons used at mines for steam and heat,	335,400
Number of tons sold to local trade and used by employes,	95,962
Number of tons produced,	3,050,722
Number of persons employed inside of mines,	3,582
Number of persons employed outside,	2,104
Number of persons employed inside between 16 and 21 years,	216
Number of persons employed outside between 14 and 21 years,	425
Number of fatal accidents inside,	13
Number of fatal accidents outside,	6
Number of non-fatal accidents inside,	40
Number of non-fatal accidents outside,	20
Number of tons of coal produced per fatal accident inside,	234,671
Number of tons produced per fatal accident inside and outside,	160,564
Number of persons employed per fatal accident inside,	276
Number of persons employed per fatal accident outside,	351
Number of persons employed per fatal accident inside and outside,	299
Number of persons employed per non-fatal accident inside,	90
Number of persons employed per non-fatal accident outside,	105
Number of persons employed per non-fatal accident inside and outside,	95
Number of wives made widows,	14
Number of children made orphans,	47
Number of steam locomotives inside,	9
Number of steam locomotives outside,	41
Number of compressed air locomotives inside,	5
Number of electric motors inside,	6
Number of cylindrical boilers,	10
Number of tubular boilers,	151
Number of steam engines of all classes,	205

Number of electric dynamos,	14
Number of pumps of all classes,	79
Number of pumps delivering water to surface,	61
Number of air compressors,	15
Number of fans in use,	29

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Lehigh and Wilkes-Barre Coal Company,	718,357
Coxe Brothers and Company, Incorporated,	634,060
C. M. Dodson and Company,	321,959
Lehigh Valley Coal Company,	320,082
Harwood Coal Company,	267,038
A. Pardee and Company,	264,191
Estate A. S. Van Wickle,	231,685
Lehigh Coal and Navigation Company,	214,243
Beaver Valley Coal Company,	40,269
Evans Colliery Company,	34,665
Thomas R. Reese Coal Company,	4,173
Total,	3,050,722

Production by Counties

Luzerne,	1,289,884
Schuylkill,	1,052,292
Carbon,	668,277
Columbia,	40,269
Total,	3,050,722

TABLE B.—Fatal and non-fatal accidents inside and outside of mines, number of tons of coal produced per accident, number of persons employed, number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside.	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Total number of employes	Number of employes inside per fatal accident	Number of employes outside per fatal accident	Number of employes inside per non-fatal accident	Number of employes outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Lehigh and Wilkes-Barre Coal Co.,	3	1	4	8	7	15	239,452	89,795	718	540	1,258	239	540	90	77
Coxe Brothers & Co., Inc.,	1	------	1	7	4	11	634,060	90,580	665	289	954	665	------	95	72
C. M. Dodson & Co.,	6	1	7	6	3	9	53,660	53,660	470	289	759	78	289	78	96
Lehigh Valley Coal Co.,	------	1	1	5	2	7	------	64,016	366	254	620	------	254	73	127
Harwood Coal Co.,	------	------	------	3	------	3	------	89,013	307	120	427	------	------	102	------
Estate A. S. Van Wickle,	------	------	------	1	1	2	------	231,685	312	208	520	------	------	312	208
Lehigh Coal and Navigation Co.,	3	3	6	8	3	11	159,478	59,804	628	308	936	209	103	79	103
Beaver Valley Coal Co.,	------	------	------	2	------	2	------	20,134	44	46	90	------	------	22	------
Miscellaneous companies,	------	------	------	------	------	------	------	------	72	50	122	------	------	------	------
Totals and averages,	13	6	19	40	20	60	234,671	76,269	3,582	2,104	5,686	276	351	90	105

TABLE C.—Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,											1		1	7.69
Falls of slate,	1	1				1							3	23.08
Falls of roof,			2					2					4	30.77
Mine cars,											2	1	3	23.08
Mules,	1												1	7.69
Struck by piece of rock,	1												1	7.69
Totals,	3	1	2			1		2			3	1	13	100.00
Outside														
Cars,		1			1				1				3	50.00
Machinery,				1							1		2	33.33
Blasts,		1											1	16.67
Totals,		2		1	1				1		1		6	100.00
Grand totals,	3	3	2	1	1	1		2	1		4	1	19	

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coals,		1					1		1				3	7.50
Falls of roof,	1	2						1		2		1	7	17.50
Mine cars,	1	2	1	2	1	1	1	2		1	1	2	15	37.50
Blasts, premature and otherwise,						1	2		1				4	10.00
Falling into slopes, etc.,									1				1	2.50
Struck by rope,										2			2	5.00
Struck by piece of coal,									1	1			2	5.00
Struck by piece of rock,					1								1	2.50
Struck by hammer,								1					1	2.50
Struck by ax,		1											1	2.50
Struck by timber,		1		1						1			3	7.50
Totals,	2	7	1	3	2	2	4	4	4	7	1	3	40	100.00
Outside														
Cars,	1		1			2	2				1		7	35.00
Mules,		1					1						2	10.00
Struck by bar,		1				1							2	10.00
Struck by piece of rock,	1							1					2	10.00
Struck by rail,	1												1	5.00
Rush of slate,								1					1	5.00
Falling off scaffold,								1					1	5.00
Falling,		2	1							1			4	20.00
Totals,	3	4	2			3	3	3		1	1		20	100.00
Grand totals,	5	11	3	3	2	5	7	7	4	8	2	3	60	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Assistant mine foremen						1							1
Miners	1	1	2					1			2		7
Miners' laborers	2							1					3
Patchers												1	1
Bottommen											1		1
Totals	3	1	2			1		2			3	1	13
Outside													
Miners											1		1
Loaders					1								1
Roller-feeders				1									1
Car loaders		1											1
Laborers		1							1				2
Totals		2		1	1				1		1		6
Grand totals	3	3	2	1	1	1		2	1		4	1	19

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Assistant mine foremen												1	1
Miners	1	6		1	1	1	2	2	2	2		2	20
Miners laborers	1			1	1		1	1	2	2	1		10
Drivers and runners						1		1		1			3
Doorboys and helpers			1										1
Trackmen and bratticemen										1			1
Timbermen and rockmen				1									1
Bottommen										1			1
Patchers							1						1
Footmen		1											1
Totals	2	7	1	3	2	2	4	4	4	7	1	3	40
Outside													
Blacksmiths and carpenters								1					1
Engineers and firemen						1							1
Slatepickers (boys)			1					1					2
Patchers							1						1
Oilers						1							1
Helpers		1	1										2
Watchmen		1											1
Dumpers		1									1		2
Laborers	1	1				1	2	1					6
Miners	1												1
Roadmen	1												1
Ashmen										1			1
Totals	3	4	2			3	3	3		1	1		20
Grand totals	5	11	3	3	2	5	7	7	4	8	2	3	60

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	1	2	1	1		1						1	7
German,											1		1
Polish,	1							1			1		3
Hungarian,								1					1
Italian,									1		2		3
Slavonian,		1			1								2
Lithuanian,	1												1
Russian,			1										1
Totals,	3	3	2	1	1	1		2	1		4	1	19

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,		6	2	1	1	3	3	3		4		1	24
Irish,		1								1			2
German,								1					1
Polish,							2	1	1	1		1	6
Hungarian,	1												1
Italian,	1	2				1					1		5
Slavonian,	1	1		1	1		1	2		1	1		9
Lithuanian,	1											1	2
Austrian,		1				1			2				4
Russian,	1			1					1				3
Tyrolean,										1			1
Magyar,			1				1						2
Totals,	5	11	3	3	2	5	7	7	4	8	2	3	60

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number ofsplits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening: Shaft — Depth	Kind of Opening: Slope (Coal or Rock) — Length	Kind of Opening: Slope (Coal or Rock) — Average pitch—degrees	Kind of Opening: Drift	Gaseous or non-gaseous	Number and types of safety lamps used: Flame	Number and types of safety lamps used: Electric
Lehigh and Wilkes-Barre Coal Co.										
Audenried No. 4 Colliery:										
Audenried No. 4,	Schuylkill,	Mammoth,	288		800	28		Gaseous,	3	
Audenried No. 11,	Schuylkill,	Buck Mountain,	72		1,400	27		Gaseous,	3	
Audenried No. 16,	Schuylkill,	Buck Mountain,	72		1,300	21		Gaseous,	1	
Audenried No. 21,	Schuylkill,	Buck Mountain,	72		1,200	19		Non-gas.,		
Audenried No. 23,	Carbon,	Lykens Valley,	84		1,170	15		Non-gas.,	2	
Honey Brook No. 5 Colliery:										
Honey Brook No. 15,	Schuylkill,	Buck Mountain,	84		700	25		Gaseous,	2	
Honey Brook No. 20,	Schuylkill,	Lykens Valley,	84		2,550	14		Non-gas.,	1	
Honey Brook No. 22,	Schuylkill,	Wharton,	96		330	25		Non-gas.,	1	
Green Mountain,	Schuylkill,	Lykens Valley,	84		325	40		Non-gas.,	1	
Water Level,	Schuylkill,	Lykens Valley and Gamma,	60				Tunnel,	Non-gas.,	1	
Coxe Brothers & Co., Inc.										
Beaver Meadow Colliery:										
Beaver Meadow No. 2,	Carbon,	Mammoth,	300							
		Wharton,	84		1,450	17		Non-gas.,		
		Gamma,	60							
		Buck Mountain,	72							
Beaver Meadow No. 4,	Carbon,	Mammoth,	300							
		Wharton,	84		760	25		Non-gas.,		
		Gamma,	60							
		Buck Mountain,	72							
Beaver Meadow No. 6,	Carbon,	Mammoth,	300							
		Wharton,	84		160	25		Non-gas.,		
		Gamma,	60							
		Buck Mountain,	72							

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening: Shaft — Depth	Slope (Coal or Rock) — Length	Slope (Coal or Rock) — Average pitch—degrees	Drift	Gaseous or non-gaseous	Number and types of safety lamps used: Flame	Electric
Oneida Colliery:										
Oneida No. 8,	Carbon,	Mammoth,	120							
		Wharton,	30		770	55		Gaseous,	12	
		Gamma,	24							
		Buck Mountain,	120							
Oneida No. 4,	Schuylkill,	Mammoth,	120							
		Wharton,	30		600	30		Gaseous,	15	
		Gamma,	24							
		Buck Mountain,	120							
Oneida No. 3,	Schuylkill,	Mammoth,	120							
		Wharton,	30	468				Non-gas.,		
		Gamma,	24							
		Buck Mountain,	120							
C. M. Dodson & Co. Peaver Brook Colliery:										
Beaver Brook No. 5,	Luzerne,	Buck Mountain,	96		1,160	24		Gaseous,		
Beaver Brook No. 6,		Wharton,	120		900	19		Non-gas.,		
Beaver Brook No. 10,		Buck Mountain,	96		1,030	16		Non-gas.,		
Beaver Brook No. 11,		Buck Mountain,	96		420	44		Gaseous,		
Beaver Brook No. 15,		Buck Mountain,	96		1,000	33		Non-gas.,		
Beaver Brook No. 16,		Lykens Valley,	72		530	45		Non-gas.,		
Lehigh Valley Coal Co. Spring Mountain Colliery:										
Spring Mountain Tender,	Luzerne,	Buck Mountain,	45		550	33		Non-gas.,		
Spring Mountain Breaker,		Gamma,	36		470	39		Non-gas.,		
Spring Mountain No. 4,		Wharton,	58		520	33		Non-gas.,		
Spring Mountain No. 1,		Mammoth,	250		1,000	13		Non-gas.,		
Spring Mountain No. 7,		Primrose,	36		700	29		Non-gas.,		

Spring Brook Colliery:									
Spring Brook No. 1,	Carbon,	Buck Mountain,	84		720	26		Non-gas.,	
Spring Brook No. 2,	Carbon,	Wharton,	78		1,350	25		Non-gas.,	
Spring Brook No. 6,	Carbon,	Mammoth,	270		770	15		Non-gas.,	
Harwood Coal Co.									
Harwood Colliery:									
Harwood No. 1,	Luzerne,	Wharton,	49		475	28		Non-gas.,	
Harwood No. 5,	Luzerne,	Gamma,	49		2,710	12		Gaseous,	
Harwood, Humboldt Road,	Luzerne,	Parlor,	49		1,520	7		Non-gas.,	
Harwood No. 31,	Luzerne,	Wharton,	49		580	14		Non-gas.,	
Harwood, New Humboldt,	Luzerne,	Buck Mountain,	46		680	14		Non-gas.,	
Harwood, New Humboldt,	Luzerne,	Gamma,	48		430	14		Non-gas.,	
A. Pardee & Co.									
Cranberry Colliery,†	Luzerne,								
Estate A. S. Van Wickle									
Coleraine Colliery:									
Coleraine No. 2,	Carbon,	Mammoth,	180		150	20		Non-gas.,	
Coleraine No. 2,	Carbon,	Mammoth,	180		520	25		Non-gas.,	
Coleraine No. 2,	Carbon,	Wharton,	96		820	25		Non-gas.,	
Coleraine No. 1,	Carbon,	Wharton,	96		402	36		Non-gas.,	
Coleraine No. 7,	Carbon,	Buck and Gamma,	42		540	26		Non-gas.,	
Coleraine,	Carbon,	Buck Mountain,	42		850	36		Gaseous,	
Coleraine,	Carbon,	Gamma,	42		850	36		Gaseous,	
Lehigh Coal and Navigation Co.									
Cranberry Colliery:									
Cranberry No. 1,	Luzerne,	Mammoth,	245		728	16		Gaseous,	
Cranberry No. 6,	Luzerne,	Wharton,	66		822	30		Non-gas.,	
Cranberry No. 9,	Luzerne,	Parlor,	47		562	5		Non-gas.,	
Cranberry No. 11,	Luzerne,	Gamma,	52		290	15		Non-gas.,	
Cranberry No. 4,	Luzerne,	Wharton,	66		685	31		Gaseous,	
Cranberry No. 8,	Luzerne,	Gamma,	52		795	34		Gaseous,	
Cranberry No. 12,	Luzerne,	Buck,	35		248	22		Gaseous,	
Cranberry No. 5,	Luzerne,	Wharton,	66		459	36		Non-gas.,	
Cranberry No. 10,	Luzerne,	Gamma,	52		350	31		Non-gas.,	
Beaver Valley Coal Co.									
Beaver Valley Colliery:									
Beaver Valley No. 1,	Columbia,	Buck Mountain,	168				Tunnel,	Non-gas.,	
Beaver Valley No. 2,	Columbia,	Buck Mountain,	168				Tunnel,	Non-gas.,	
Evans Colliery Co.									
Evans Colliery:									
Evans,	Carbon,	Gamma,	84		700	10		Non-gas.,	
Evans,	Carbon,	Gamma,	48		250	18		Non-gas.,	

†Sold out to Lehigh Coal and Navigation Co., July 1, 1916.

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and types of safety lamps used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Thomas R. Reese Coal Co. Dusky Diamond Colliery: Dusky Diamond,	Luzerne,	Lykens,	74		150	22		Non-gas.,		

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Lehigh and Wilkes-Barre Coal Co.												
Audenried No. 4 Colliery:												
Audenried No. 4,	Schuylkill,	Mammoth,	Guibal,	16	90	.8	Steam,	46,000	53,500	115,000	5	469
Audenried No. 11,	Schuylkill,	Buck Mountain,	Guibal,	12	85	.5	Electricity,	39,000	43,000		2	
Audenried No. 16,	Schuylkill,	Buck Mountain,										
Audenried No. 21,	Schuylkill,	Buck Mountain,	Guibal,	15	80	.5	Steam,	50,000	52,000		4	
Audenried No. 23,	Carbon,	Lykens Valley,										
Honey Brook No. 5 Colliery:												
Honey Brook No. 15,	Schuylkill,	Buck Mountain,	Guibal,	15	75	.8	Steam,	51,000	55,050	23,000	4	249
Honey Brook No. 20,	Schuylkill,	Lykens Valley,	Guibal,	8	135	.8	Steam,	34,400	37,500	16,000	3	
Honey Brook No. 22,	Schuylkill,	Wharton,	Guibal,	8	50	.5	Steam,	10,900	12,110	7,500	1	
Green Mountain,		Lykens Valley,	Guibal,	15	65	.7	Steam,	53,200	56,700	28,000	4	
Water Level,		Lykens Valley and Gamma,	Guibal,	12	60	.5	Steam,	42,700	46,350	18,000	3	
Coxe Brothers & Co., Inc.												
Beaver Meadow Colliery:												
Beaver Meadow No. 2,	Carbon,	Mammoth, Wharton, Gamma, Buck Mountain,	Guibal,	90	60	.7	Steam,	19,560	57,360	16,480	1	80
Beaver Meadow No. 4,	Carbon,	Mammoth, Wharton, Gamma, Buck Mountain,	Guibal,	12	90	.4	Steam,	40,570	93,760	18,460	3	125

TABLE I—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Beaver Meadow No. 6,	Carbon,	Mammoth, Wharton, Gamma, Buck Mountain,	Jeffrey,	6	150	.7	Electricity,	20,000	60,000	15,000	4	45
Oneida Colliery:												
Oneida No. 8,	Carbon,	Mammoth, Wharton, Gamma, Buck Mountain,	Pelzer,	12.6	125	.7	Steam,	70,000	72,000	55,000	8	172
Oneida No. 4,	Schuylkill,	Mammoth, Wharton, Gamma, Buck Mountain,	Guibal,	20	70	.4	Steam,	43,000	43,900	32,700	5	125
Oneida No. 3,	Schuylkill,	Mammoth, Wharton, Gamma, Buck Mountain,	Guibal,	20	60	.5	Steam,	55,800	61,900	48,200	4	118
C. M. Dodson & Co.												
Beaver Brook Colliery:												
Beaver Brook No. 5,	Luzerne,	Buck Mountain,					Natural,	16,500	19,500	16,000	3	74
Beaver Brook No. 6,		Wharton,					Natural,	7,500	9,500	7,000	2	25
Beaver Brook No. 10,		Buck Mountain,	Guibal,	16	80		Steam,	12,500	14,500	12,000	4	49
Beaver Brook No. 11,		Buck Mountain,	Guibal,	16	90		Steam,	30,000	32,000	29,500	4	133
Beaver Brook No. 15,		Buck Mountain,					Natural,	14,000	16,000	13,500	2	60
Beaver Brook No. 16,		Lykens Valley,					Natural,	29,000	31,000	28,500	2	129

Lehigh Valley Coal Co.													
Spring Mountain Colliery:													
Spring Mountain Tender,	Luzerne,	Buck Mountain,											
Spring Mountain Breaker,		Gamma,											
Spring Mountain No. 4,		Wharton,	Guibal,	20	40	5.5	Steam,	49,500	50,000	40,000	3	303	
Spring Mountain No. 1,		Mammoth,	Sirocco,	3.6	225		Electricity,						
Spring Mountain No. 7,		Primrose,											
Spring Brook Colliery:													
Spring Brook No. 1,		Buck Mountain,											
Spring Brook No. 2,	Carbon,	Wharton,	Guibal,	16	60	3	Steam,	37,100	38,600	28,100	4	45	
Spring Brook No. 6,		Mammoth,	Guibal,	14	70	3	Electricity,	49,600	51,000	33,100	4	18	
Harwood Coal Co.													
Harwood Colliery:													
Harwood No. 1,		Wharton,	Guibal,	16	172	2	Steam,	34,677	34,677	12,000	1	48	
Harwood No. 5,		Gamma,	Guibal,	16	172	2	Steam,	64,578	64,578	21,560	2	91	
Harwood, Humboldt Road,	Luzerne,	Parlor,	*									35	
Harwood No. 31,		Wharton,	*									35	
Harwood, New Humboldt,		Buck Mountain,	Sturtevant,	8	139	.4	Electricity,	57,650	57,650	20,500	2	54	
Harwood, New Humboldt,		Gamma,										44	
A. Pardee & Co.													
Cranberry Colliery,†	Luzerne,												
Estate A. S. Van Wickle													
Coleraine Colliery:													
Coleraine No. 2,		Mammoth,	*									42	
Coleraine No. 2,		Mammoth,										46	
Coleraine No. 2,	Carbon,	Wharton,										28	
Coleraine No. 1,		Wharton,										19	
Coleraine No. 7,		Buck and Gamma,					Natural,	20,000	22,000	16,000	2	70	
Coleraine,		Buck Mountain,	Guibal,	16	85		Steam,	33,829	40,795	22,618	2	74	
Coleraine,		Gamma,										24	
Lehigh Coal and Navigation Co.													
Cranberry Colliery:													
				16	70	.7							
Cranberry No. 1,	Luzerne,	Mammoth,	Guibal,	16	70	.75	Steam,	83,000	86,000	41,000	5	186	
				16	70	.7							
Cranberry No. 6,		Wharton,											
Cranberry No. 9,	Luzerne,	Parlor,	Guibal,	16	70	1	Steam,	43,000	50,000	42,000	5	143	
Cranberry No. 11,		Gamma,											
Cranberry No. 4,		Wharton,	Guibal,	16	70	1	Steam,	54,100	63,700	16,500	7	52	
Cranberry No. 8,	Luzerne,	Gamma,											
Cranberry No. 12,		Buck,											
Cranberry No. 5,	Luzerne,	Wharton,					Natural,	28,000	31,500	18,330	2		
Cranberry No. 10,		Gamma,						55,000	61,000	35,500	3	247	

*Robbing. No air measurements taken.

TABLE I.—Continued.

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Beaver Valley Coal Co.												
Beaver Valley Colliery:												
Beaver Valley No. 1,	Columbia,	Buck Mountain,					Natural,	20,000	12,000	12,000	2	10
Beaver Valley No. 2,		Buck Mountain,					Natural,	25,000	15,000	15,000	2	34
Evans Colliery Co.												
Evans Colliery:												
Evans,	Carbon,	Gamma,					Natural,	7,600	7,600	900	2	30
Evans,		Gamma,					Natural,	18,200	18,300	1,100	3	21
Thomas R. Reese Coal Co.												
Dusky Diamond Colliery:												
Dusky Diamond,	Luzerne,	Lykens,	*				Natural,					6

*Robbing. No air measurements taken.

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	General Superintendent	Post Office	Superintendent	Post Office	Railroad to Mine
Lehigh and Wilkes-Barre Coal Co.						
Audenried No. 4,	Schuylkill,	C. F. Huber,	Wilkes-Barre,	Walter Fahringer,	Audenried,	C. R. R. of N. J.
Honey Brook No. 5,						
Coxe Brothers & Co., Inc.,						
Beaver Meadow,	Carbon,	Thomas Thomas,	Wilkes-Barre,	W. H. Davies,	Hazleton,	Lehigh Valley.
Oneida,	Schuylkill,					
C. M. Dodson & Co.						
Beaver Brook,	Luzerne,	J. B. Connell,	Beaver Brook,	Merritt Zimmerman,	Beaver Brook,	L. V. and C. R. R. of N. J.
Lehigh Valley Coal Co.						
Spring Mountain,	Luzerne,	Thomas Thomas,	Wilkes-Barre,	W. H. Davies,	Hazleton,	Lehigh Valley.
Spring Brook,	Carbon,					
Spring Brook Washery,	Carbon,					
Harwood Coal Co.						
Harwood,	Luzerne,	H. M. Crankshaw,	Hazleton,			Lehigh Valley.
A. Pardee & Co.*						
Cranberry,	Luzerne,	Frank Pardee,	Hazleton,			Lehigh Valley.
Estate A. S. Van Wickle.						
Coleraine,	Carbon,	John Harvey,	Leviston,			L. V., C. R. R. of N. J. and P. and R.
Lehigh Coal and Navigation Co.						
Cranberry,	Luzerne,	H. M. Crankshaw,	Hazleton,	J. E. Anderson,	Hazleton,	Lehigh Valley.
Beaver Valley Coal Co.						
Scotch Valley,	Columbia,	Grafflin Coon,	Baltimore, Md.,	Geo. E. Klingaman,	Scotch Valley,	Pennsylvania.
Evans Colliery Co.						
Evans,	Carbon,	Gwillym Edwards,	Luzerne,	Timothy Ryan,	Hazleton,	Lehigh Valley.
Thomas R. Reese Coal Co.						
Dusky Diamond,	Luzerne,	Thomas R. Reese,	Audenried,			C. R. R. of N. J.

*Sold out to Lehigh Coal and Navigation Co., July 1, 1916.

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives: Pounds of black powder used	Explosives: Pounds of dynamite used	Explosives: Pounds of permissible explosives used
Lehigh and Wilkes-Barre Coal Co.												
Audenried No. 4,	Schuylkill,	367,097	44,875	4,321	416,293	248	665	3	8	16,350	124,807	82,818
Strippings,							37					
Honey Brook No. 5,		280,877	21,187		302,064	257	419	1	7	28,975	106,515	18,764
Strippings,							53					
Miscellaneous,							84					
Totals,		647,974	66,062	4,321	718,357		1,258	4	15	45,325	231,322	101,582
Coxe Brothers & Co., Inc.												
Beaver Meadow,	Carbon,	272,198	22,179	5,748	300,125	272	427		6	22,600	146,901	
Oneida,	Schuylkill,	301,279	25,243	7,413	333,935	274	527	1	5	8,375	182,133	
Totals,		573,477	47,422	13,161	634,060		954	1	11	30,975	329,034	
C. M. Dodson & Co.												
Beaver Brook,	Luzerne,	289,208	31,000	1,751	321,959	282	759	7	9	17,850	206,825	
Lehigh Valley Coal Co.												
Spring Mountain,	Luzerne,	201,155	66,806	4,888	272,849	259	606	1	7	34,000	102,913	
Spring Brook,	Carbon,											
Spring Brook Washery,	Carbon,	47,233			47,233	224	14					
Totals,		248,388	66,806	4,888	320,082		620	1	7	34,000	102,913	

Harwood Coal Co. Harwood,	Luzerne,	209,776		57,262	267,038	261	427		3	100	72,700	
A. Pardee & Co. Cranberry,*	Luzerne,	225,017	35,040	4,134	264,191	118	†	†	†	1,500	174,175	175,675
Estate A. S. Van Wickle Coleraine,	Carbon,	178,960	49,205	3,520	231,685	299	520		2	6,250	70,855	
Lehigh Coal and Navigation Co. Cranberry,	Luzerne,	186,493	25,176	2,574	214,243	124	936	6	11	395	158,572	
Beaver Valley Coal Co. Scotch Valley,	Columbia,	32,670	7,200	399	40,269	240	90		2		9,000	4,000
Evans Colliery Co. Evans,	Carbon,	27,200	7,000	465	34,665	271	113				19,000	
Thomas R. Reese Coal Co. Dusky Diamond,	Luzerne,	197	489	3,487	4,173	244	9				50	1,800
Grand totals,		2,619,360	335,400	95,962	3,050,722		5,686	19	60	136,395	1,374,446	283,057

*Sold out to Lehigh Coal and Navigation Co., July 1, 1916.
†Included with Cranberry, of Lehigh Coal and Navigation Co.

TABLE 2.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Names of Operators	County	Power Plant										Pumps				Haulage					Air Compressors	
		Boilers				Engines										Locomotives						
		Cylindrical		Tubular		Steam Engines (All Classes)		Internal Combustion Engines (Gas)		Electric Dynamos (All Classes)				Pumps Delivering Water to the Surface								
		Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total kilowatts	Number	Total capacity in gallons per minute	Number	Approximate number of gallons per minute	Number of horses and mules	Gasoline	Steam	Air	Electric	Number	Total capacity cubic feet per minute
Lehigh and Wilkes-Barre Coal Co.,	Schuylkill,			39	4,700	46	5,915			2	168	18	18,600	9	9,000	129		9		1	2	1,000
Coxe Brothers & Co., Inc.,	Carbon, Schuylkill,			31	5,800	40	4,500			1	22	8	7,200	8	7,000	113		8	5		7	2,350
C. M. Dodson & Co.,	Luzerne,			25	3,600	19	1,440					9	12,100	9	5,750	62		6		1	2	605
Lehigh Valley Coal Co.,	Luzerne, Carbon,			18	2,700	23	3,200			1	150	10	9,700	8	3,500	40		3		4	1	350
Harwood Coal Co.,	Luzerne,					8	800			8	241	10	7,200	5	3,600	38		3				
Estate A. S. Van Wickle,	Carbon,			18	2,150	36	1,340			1	19	7	7,347	7	2,466	62		5			1	65
Lehigh Coal and Navigation Co.,*	Luzerne,	10	300	13	4,100	20	2,600					11	20,000	11	7,500	150		16			2	750
Beaver Valley Coal Co.,	Columbia,			4	450	5	150					2	500			4						
Evans Colliery Co.,	Carbon,			2	700	6	185					4	2,200	4	2,200	5						
Thomas R. Reese Coal Co.,	Luzerne,			1	125	2	30			1	240											
Totals,		10	300	151	24,325	205	20,160			14	840	79	84,847	61	41,016	603		50	5	6	15	5,120

*Including A. Pardee & Co.

TABLE 3.—Part 1.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside															Total inside	Outside											Total outside	Grand total inside and outside
		Mine foremen	Assistant mine foremen	Fire bosses	Miners	Miners laborers	Machine miners	Machine runners and scrapers	Drivers and runners	Motormen and assistants	Doorboys and helpers	Trackmen and bratticemen	Timbermen and rockmen	Pumpmen and pipemen	Electricians and helpers	All other employes		Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Machinists and helpers	Trackmen and helpers	Slate pickers (boys)	Slate pickers (men)	Office employes	All other employes			
Lehigh and Wilkes-Barre Coal Co.,	Schuylkill,	3	7	3	352	209	----	----	58	2	39	29	----	12	----	4	718	3	2	33	55	3	10	65	----	16	353	540	1,258
Coxe Bros. & Co., Inc.	{Carbon, / Schuylkill, }	3	14	----	432	62	----	----	55	4	12	25	23	2	----	33	665	----	2	24	49	6	3	2	2	6	195	289	954
C. M. Dodson & Co.,	Luzerne,	1	6	1	158	210	----	----	15	2	3	8	20	12	2	32	470	2	4	14	32	16	4	26	12	10	169	289	759
Lehigh Valley Coal Co.	{Luzerne, / Carbon, }	2	7	----	159	96	----	----	16	10	5	12	22	16	2	19	366	---	3	22	45	41	4	33	----	4	102	254	620
Harwood Coal Co.,	Luzerne,	1	3	----	142	98	----	----	17	----	----	9	24	4	----	9	307	---	2	14	11	5	5	12	1	5	65	120	427
Estate A. S. Van Wickle,	Carbon,	1	4	3	123	71	----	----	26	----	----	22	38	6	----	18	312	1	4	19	29	2	4	20	2	8	119	208	520
Lehigh Coal and Navigation Co.,*	Luzerne,	4	6	3	293	171	----	----	46	10	3	20	26	12	----	34	628	1	3	60	65	14	7	6	8	11	133	308	936
Beaver Valley Coal Co.,	Columbia,	1	1	----	10	18	----	----	6	----	----	----	4	----	----	4	44	1	1	2	6	----	----	4	6	1	25	46	90
Evans Colliery Co.,	Carbon,	1	----	----	37	16	----	----	3	----	----	3	----	2	----	4	66	1	1	5	8	----	----	12	----	1	19	47	113
Thomas R. Reese Coal Co.,	Luzerne,	1	----	----	1	4	----	----	----	----	----	----	----	----	----	----	6	----	----	----	1	----	----	----	----	----	2	3	9
Totals,		18	48	10	1,707	955	----	----	242	28	62	128	157	66	4	157	3,582	9	22	193	301	87	37	180	31	62	1182	2,104	5,686

*Including employes of A. Pardee & Co.

TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Total
Lehigh and Wilkes-Barre Coal Co.,	Schuylkill,	19	16	18	16	24	21	22	23	22	23	24	24	252
Coxe Brothers & Co., Inc.,	Carbon,	22	21	23	16	26	23	23	24	24	24	24	23	273
	Schuylkill,													
C. M. Dodson & Co.,	Luzerne,	25	25	27	14	22	25	19	25	25	25	25	25	282
Lehigh Valley Coal Co.,	Luzerne,	21	21	21	16	25	20	20	25	22	24	24	20	259
	Carbon,													
Harwood Coal Co.,	Luzerne,	19	21	22	18	22	21	24	26	21	24	21	22	261
A. Pardee & Co.,*	Luzerne,	20	18	19	21	22	18							118
Estate A. S. Van Wickle,	Carbon,	24	25	27	23	26	25	24	26	25	25	24	25	299
Lehigh Coal and Navigation Co.,	Luzerne,							21	26	8	23	24	22	124
Beaver Valley Coal Co.,	Columbia,	19	17	23	13	20	21	22	23	19	24	21	18	240
Evans Colliery Co.,	Carbon,	13	22	28	20	26	22	20	25	23	23	24	25	271
Thomas R. Reese Coal Co.,	Luzerne,	24	21	26	24	9	14	10	15	25	26	25	25	244

*Sold out to Lehigh Coal and Navigation Co., July 1, 1916.

TABLE 4.—Fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 10	Jacob Reitmyer,	American,	Miner,	23	M.	1	1	Oneida,	Schuylkill,	Instantly killed. Struck by rock near face of room.
19	Paul Carrish,	Polish,	Laborer,	27	M.	1		Audenried No. 4,	Schuylkill,	Fatally injured. Kicked in abdomen by mule.
25	Dominick Statofski,	Lithuanian,	Laborer,	20	S.			Cranberry,	Luzerne,	Fatally injured by fall of slate at face of breast.
Feb. 10	John Dice,	American,	Car loader,	52	M.	1		Spring Mountain,	Carbon,	Fatally injured. Crushed by railroad cars. Outside
23	Charles Hager,	Slavonian,	Miner,	50	M.	1	4	Cranberry,	Luzerne,	Fatally injured by fall of slate while robbing pillars.
29	Jacob Michael,	American,	Laborer,	47	M.	1	5	Cranberry,	Luzerne,	Instantly killed by explosion of blast on stripping. Outside.
Mar. 1	Andrew Stifko,	Russian,	Miner,	34	M.	1	2	Beaver Brook,	Luzerne,	Fatally injured by fall of clod at face of breast.
10	Andrew Hudah,	American,	Miner,	45	M.	1	2	Beaver Brook,	Luzerne,	Fatally injured by fall of rock while robbing pillars.
April 11	Robert Martin,	American,	Roller feeder,	21	S.			Cranberry,	Luzerne,	Fatally injured by falling into breaker machinery. Outside.
May 29	Wassil Cherbaugh,	Slavonian,	Loader,	38	M.	1	7	Beaver Brook,	Carbon,	Fatally injured. Caught between cars. Outside.
June 8	Thomas F. Glennon,	American,	Assistant foreman,	46	M.	1	6	Beaver Brook,	Luzerne,	Fatally injured by fall of slate on slope while making repairs.
Aug. 5	John Mottle,	Polish,	Miner,	44	M.	1	5	Honey Brook No. 5.	Schuylkill,	Fatally injured by fall of rock while robbing pillars.
28	Steve Buskey,	Hungarian,	Laborer,	28	M.	1	2	Beaver Brook,	Luzerne,	Fatally injured by fall of roof at face of gangway.
Sept. 5	Frank Constance,	Italian,	Laborer,	45	M.	1	3	Audenried No. 4,	Schuylkill,	Fatally injured. Caught between lokie and cars. Outside.
Nov. 7	Anthony Grim,	German,	Bottomman,	45	S.			Audenried No. 4,	Schuylkill,	Instantly killed. Struck by car on plane.
25	Joe Surani,	Italian,	Miner,	38	M.	1	5	Beaver Brook,	Luzerne,	Instantly killed. Run over by car on slope.
27	Thomas Kosko,	Italian,	Miner,	15	S.			Cranberry,	Luzerne,	Fatally injured. Caught in breaker machinery. Outside.
28	John Vilinski,	Polish,	Miner,	34	M.	1	5	Beaver Brook,	Luzerne,	Fatally injured by fall of coal at face of breast.
Dec. 28	George Butchko,	American,	Patcher,	17	S.			Cranberry,	Luzerne,	Fatally injured. Caught between car and prop on gangway.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 10	Mike Cohinski,	Russian,	Laborer,	53	M.	Cranberry,	Luzerne,	Back and shoulders sprined by fall of rock at face of gangway.
12	Paul Colotchkar,	Slavonian,	Roadman,	20	S	Beaver Meadow,	Carbon,	Two fingers cut off. Run over by cars. Outside.
22	Frank Angot,	Italian,	Miner,	48	M.	Audenried No. 4,	Schuylkill,	Leg bruised. Struck by rail on stripping. Outside.
26	John Mizer,	Lithuanian,	Miner,	25	M.	Cranberry,	Luzerne,	Back and chest injured and hip dislocated. Caught between car and rib at bottom of slope.
	Metro Palimine,	Hungarian,	Laborer,	46	M.	Spring Mountain,	Carbon,	Leg fractured. Srtuck by piece of rock that slid down the bank. Outside.
Feb. 1	Wasil Shurgalo,	Slavonian,	Miner,	48	M.	Audenried No. 4,	Schuylkill,	Left hand fractured. Struck by prop in breast.
2	George Sauer,	American,	Dumper,	47	M.	Spring Mountain,	Carbon,	Leg bruised by falling on girder over car pit. Outside.
3	Ray B. Nicholas,	American,	Laborer	32	S.	Beaver Brook,	Carbon,	Jaw bone fractured. Struck by bar on timber yard. Outside.
8	Dominick Metascovage	American,	Miner,	46	M.	Beaver Brook,	Carbon,	Leg fractured by fall of rock 200 feet from face of gangway.
	Joe Razio,	American,	Miner,	36	M.			
9	Mike Ambrossi,	Austrian,	Miner,	41	M.	Oneida,	Schuylkill,	Foot cut. Struck by ax while cutting wedge.
17	Peter Carlin, Sr.,	Irish,	Watchman,	65	M.	Beaver Meadow,	Carbon,	Abdomen ruptured by falling on valve box. Outside.
18	Harry Seymour,	American,	Helper,	18	S.	Oneida,	Schuylkill,	Ankle sprained by mule falling on him. Outside.
19	Joe Kender,	Italian,	Miner,	40	M.	Spring Mountain,	Carbon,	Collar bone fractured. Caught between car and prop on gangway.
21	Terrence Sweeney,	American,	Footman,	42	S.	Spring Mountain,	Carbon,	Leg fractured. Run over by cars on slope.
23	Joe Cesare,	Italian,	Miner,	47	M.	Honey Brook No. 5,	Schuylkill,	Back and body bruised by fall of coal on gangway.
Mar. 6	John Stranko,	American,	Slate picker,	16	S.	Audenried No. 4,	Schuylkill,	Two ribs fractured by falling in breaker. Outside.
10	John Gatoski,	American,	Doorboy,	18	S.	Spring Mountain,	Carbon,	Leg fractured. Caught between cars on gangway.

	22	Louis Matosh,	Magyar,	Helper,	19	S.	Honey Brook No. 5,	Schuylkill,	Leg fractured and body bruised. Run over by cars. Outside.
April	12	Bartol Solinski,	Russian,	Timberman,	49	M.	Cranberry,	Luzerne,	Pelvis fractured. Caught between car and timber on gangway.
	22	John Tamonday,	Slavonian,	Laborer,	24	S.	Harwood,	Luzerne,	Femur fractured. Struck by prop at face of breast.
	24	Robert Wallace,	American,	Miner,	35	M.	Harwood,	Luzerne,	Leg crushed and muscles torn. Caught between car and rib of gangway.
May	15	George Stashinskey,	Slavonian,	Miner,	40	M.	Coleraine,	Carbon,	Leg fractured. Struck by piece of rock in chute.
	19	Andrew Meyers,	American,	Laborer,	50	M.	Cranberry,	Luzerne,	Foot sprained. Caught by lokie.
June	8	Joseph Barlitti,	Italian,	Miner,	24	S.	Cranberry,	Luzerne,	Face and hands lacerated by explosion of blast in heading.
	24	Nicholas Minor,	American,	Oiler,	20	S.	Honey Brook No. 5,	Schuylkill,	Arm lacerated by coming in contact with circular saw. Outside.
	28	Jacob Ulshafer,	American,	Driver,	18	S.	Oneida,	Schuylkill,	Legs bruised. Caught by cars on gangway.
	30	John Oloxa,	Austrian,	Laborer,	44	M.	Cranberry,	Luzerne,	Squeezed about body. Caught between cars. Outside.
		Edward Sweeney,	American,	Engineer,	21	S.	Beaver Brook,	Luzerne,	Foot lacerated. Caught between bumpers of lokie and cars. Outside.
July	7	Dominick Girard,	American,	Laborer,	21	S.	Honey Brook No. 5,	Schuylkill,	Skull fractured. Dragged by mule. Outside.
	8	Peter Zelesnak,	Slavonian,	Miner,	47	M.	Beaver Meadow,	Carbon,	Face, arms and legs bruised by explosion of blast at face of breast.
	9	Stanley Oleman,	Polish,	Laborer,	30	S.	Beaver Brook,	Luzerne,	Head cut by fall of coal at face of breast.
	11	Andrew Fagety,	Magyar,	Laborer,	20	S.	Honey Brook No. 5,	Schuylkill,	Arm lacerated. Caught between cars. Outside.
	12	Mike Krundok,	American,	Patcher,	16	S.	Honey Brook No. 5,	Schuylkill,	Ribs fractured. Caught between car and prop on gangway.
	25	Michael Markocheck,	American,	Patcher,	19	S.	Beaver Meadow,	Carbon,	Jaw bone fractured. Caught betweeen cars. Outside.
		Walter Jackulerts,	Polish,	Miner,	27	M.	Audenried No. 4,	Schuylkill,	Face lacerated by explosion of blast at face of breast.
Aug.	12	George Koehler,	German,	Carpenter,	55	M.	Cranberry,	Luzerne,	Leg fractured by falling off scaffold. Outside.
		Thomas Offsa,	American,	Driver,	19	S.	Audenried No. 4,	Schuylkill,	Body bruised and foot injured. Caught between car and rib.
	14	John Gravella,	Slavonian,	Miner,	54	M.	Audenried No. 4,	Schuylkill,	Two ribs fractured. Caught by car at face of breast.
	17	George Biprovage,	Polish,	Laborer,	19	S.	Audenried No. 4,	Schuylkill,	Leg fractured by fall of clod at face of breast.
	23	Harry Poliniak,	Slavonian,	Laborer,	41	M.	Honey Brook No. 5,	Schuylkill,	Foot lacerated. Struck by piece of rock on stripping. Outside.
	26	James Dark,	American,	Slatepicker,	17	S.	Coleraine,	Carbon,	Leg fractured by rush of slate in chute. Outside.
	28	William Paisley, Jr.,	American,	Miner,	30	M.	Cranberry,	Luzerne,	Arm fractured. Struck by hammer while holding bar.
Sept.	6	Wasil Shalinski,	Russian,	Laborer,	31	S.	Cranberry,	Luzerne,	Face cut and leg fractured by explosion of blast.

TABLE 5.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or Single	Name of Colliery	County	Nature and Cause of Accident in Brief
9	John Elosky,	Austrian,	Miner,	33	M.	Spring Mountain,	Carbon,	Back bruised and wrist cut. Knocked down manway by slip of coal.
14	William Miller,	Polish,	Miner,	50	S.	Beaver Meadow,	Carbon,	Collar bone fractured. Struck by piecee of coal in chute.
29	Andrew Chura,	Austrian,	Laborer,	28	M.	Spring Mountain,	Carbon,	Fingers bruised by fall of coal near face of breast.
Oct. 3	Michael Thomas,	American,	Bottomman,	26	M.	Audenried No. 4,	Schuylkill,	Leg fractured. Struck by rope socket at bottom of slope.
	Joseph Moran,	American,	Ashman,	25	M.	Cranberry,	Luzerne,	Arm fractured by falling in boiler house. Outside.
12	Michael Duffy,	Irish,	Driver,	18	S.	Harwood,	Luzerne,	Clavicle fracture. Caught by cars on gangway.
	Benter Marchaack,	Slavonian,	Bratticeman,	41	M.	Oneida,	Schuylkill,	Shoulder dislocated. Struck by piece of coal.
19	Mike Vistola,	Polish,	Laborer,	24	M.	Beaver Brook,	Carbon,	Back broken by fall of rock while making hitch to stand timber.
20	John Dalla,	Tyrolean,	Miner,	27	S.	Oneida,	Schuylkill,	Arm broken and head cut by fall of clod at face of breast.
28	Charles Ridler,	American,	Laborer,	28	M.	Beaver Brook,	Carbon,	Leg fractured. Struck by rope on slope.
	Thomas Paisley,	American,	Miner,	50	M.	Cranberry,	Luzerne,	Collar bone fractured. Struck by plank while making room to set timber.
Nov. 25	Joe Moranda,	Italian,	Laborer,	45	M.	Beaver Brook,	Carbon,	Pelvis and ribs fractured. Thrown from car on slope.
28	John Tucker,	Slavonian,	Dumper,	45	S.	Beaver Brook,	Carbon,	Hand crushed. Caught between car and jack. Outside.
Dec. 14	George Rhoda,	American,	Assistant foreman,	31	M.	Beaver Meadow,	Carbon,	Skull fractured. Thrown from car.
15	John Mehelco,	Lithuanian,	Miner,	30	S.	Scotch Valley,	Columbia,	Rib fractured and shoulder cut. Caught between cars.
21	Anthony Guido,	Polish,	Miner,	38	M.	Scotch Valley,	Columbia,	Back and head cut by fall of roof at face of chute.

CONDITION OF COLLIERIES.

LEHIGH AND WILKES-BARRE COAL COMPANY

Audenried No. 4 and Honey Brook No. 5 Collieries.—Ventilation, drainage and condition as to safety, good.

COXE BROTHERS AND COMPANY, INCORPORATED

Beaver Meadow Colliery.—Ventilation, generally good. Drainage, roads good, and general condition as to safety, good.

Oneida Colliery.—Ventilation, drainage and condition as to safety, good.

C. M. DODSON AND COMPANY

Beaver Brook Colliery.—Ventilation, roads, drainage and condition as to safety, good.

LEHIGH VALLEY COAL COMPANY

Spring Mountain and Spring Brook Collieries.—Ventilation, roads, drainage and condition as to safety, good.

HARWOOD COAL COMPANY

Harwood Colliery.—Ventilation, roads and drainage, fair. Condition as to safety, good.

A. PARDEE AND COMPANY

Cranberry Colliery.—Sold out to Lehigh Coal and Navigation Company on July 1, 1916.

ESTATE A. S. VAN WICKLE

Coleraine Colliery.—Ventilation, drainage, roads and general condition as to safety, good.

LEHIGH COAL AND NAVIGATION COMPANY

Cranberry Colliery.—Ventilation and condition as to safety, good. Roads and drainage, fair.

BEAVER VALLEY COAL COMPANY

Scotch Valley Colliery.—Ventilation, drainage and condition as to safety, good.

EVANS COLLIERY COMPANY

Evans Colliery.—Ventilation, poor. Drainage and condition as to safety, good.

THOMAS R. REESE COAL COMPANY

Dusky Diamond Colliery.—Ventilation, roads, drainage and condition as to safety, good.

IMPROVEMENTS

LEHIGH AND WILKES-BARRE COAL COMPANY

Audenreid No. 4 Colliery.—Tunnel was driven from Buck Mountain to Gamma to Wharton vein from No. 3 West, No. 11 slope. Inside slope and Plane No. 6, West Buck Mountain No. 11 slope with rope hole to No. 10 stripping. Installed one 12 by 16 inch hoisting engine located near No. 5 Breaker. Completed sinking of slope in Gamma vein, shaft basin. Built mule barn at No. 21 slope.

Honey Brook No. 5 Colliery.—Tunnel was driven from the Gamma to the Wharton vein No. 4 west, No. 15 slope. Laid a 4-inch steam line 2,800 feet in length from Green Mountain slope to Water level tunnel, eliminating boiler plant at this operation.

COXE BROTHERS AND COMPANY, INCORPORATED

Beaver Meadow Colliery.—Slope No. 6 was extended a distance of 275 feet for the purpose of furnishing an outlet for the coal from the Wharton vein at the west end of the property. A rock hole 6 by 8 feet was driven from No. 2 drainage tunnel a distance of 60 feet to Greenfield stripping. The stripping coal will be dumped down this hole and then taken to the breaker by way of No. 2 slope. A four-foot gauge locomotive road was constructed to the northeast Greenfield stripping. This road is 1,000 feet long and was built for the purpose of transporting the coal from the stripping to the breaker. Laid 2,100 feet of 1½ inch water line to the Temperance stripping for the purpose of supplying water to the steam shovels and locomotives. Built a tile compressor house near the top of No. 2 slope. Installed an electric driven fan near the village of Coleraine for the purpose of ventilating the No. 5 inside slope workings. A new brick bulk-head was started in the boiler house. During the year 353,896 cubic yards were excavated from the several strippings.

Oneida Colliery.—A flume was constructed across the No. 6 stripping to take care of the surface drainage which would otherwise run into the stripping and then into the mine. Built a wash-house at No. 4 slope. Drove a rock tunnel 8 by 12 feet from Gamma vein, for the purpose of developing the virgin coal in the basin of the Wharton vein. No. 3 workings were connected with the No. 6 tunnel by a tunnel from the Gamma vein, for the purpose of providing a short haulage-road to the foot of the shaft from the west end of the property. No. 9 inside slope was extended a distance of 358 feet, for the purpose of developing the basin of the Buck Mountain vein.

C. M. DODSON AND COMPANY

Beaver Brook Colliery.—In No. 5 slope a tunnel 90 feet long was driven from the underlap Buck Mountain bed to the unedrlap Lykens bed. In No. 16 slope a tunnel 125 feet long was driven from the Lykens bed to the basin of the Buck Mountain bed. No. 18 slope was driven 165 feet to the line during the year. Built a concrete hospital in No. 16 slope. The old bottom level north dip Lykens

gangway between Nos. 15 and 18 slopes, was reopened for 900 feet and a new bottom turned off No. 18 slope. The coal from No. 15 slope can now be taken out through No. 5 slope. Nine rock holes were driven in No. 16 slope from the Lykens bed to the Buck Mountain basin. Eight rock holes were driven in No. 11 slope from the Gamma bed to the Wharton bed. Three rock holes were driven at the top of No. 19 slope from the Buck Mountain bed to the Gamma bed. One rock hole was driven in No. 18 slope from the Lykens bed to the Buck Mountain bed. Installed a 15-foot Sirocco blower fan in the boiler house. A 70-C Bucyrus steam shovel, 3 Vulcan locomotives 11 by 16 inches, 24 Western dump cars, 60 tons of 60 pound rails together with frogs, latches and ties, were purchased to strip the Mammoth bed in No. 1 basin at the east end of the lease. Installed one broken coal spiral in the breaker.

LEHIGH VALLEY COAL COMPANY

Spring Mountain Colliery.—A 100,000 gallon capacity fresh water tank was erected. Steam shovel was transferred from Black Ridge for the purpose of loading No. 5 bank. The first leg of the breaker refuse conveyor line was changed from a double to a single line. A rock tunnel 8 by 12 by 192 feet long was driven from the West Wharton underlap gangway to the Buck Mountain overlap vein. A rock tunnel 8 by 12 by 132 feet is being driven south from the West Wharton underlap gangway to connect with an old tunnel driven north from the Mammoth vein, which was driven before the Lehigh Valley Coal Company started operations at this colliery. One hundred and sixteen thousand nine hundred and twenty-three cubic yards of overburden were removed from the Northwest shipping.

Spring Brook Colliery.—The sides and ceiling of the first aid room were plastered and a concrete floor put in, making the interior fireproof. Installed a boiler for making hot water. The shaft engine house was plastered inside and outside and a concrete floor put in making it entirely fireproof. Installed a drill press in the shops and erected a crane in the carpenter shop. The air shaft at No. 2 slope was concreted from the surface down for a distance of 40 feet to solid rock. At No. 2 slope in the inside Buck Mountain slope, second level, a 3 5-8 inch vertical bore hole 140 feet long was drilled upward to the basin of the No. 6 Wharton slope workings for the purpose of relieving the submerged workings.

ESTATE A. S. VAN WICKLE

Coleraine Colliery.—Drove a rock tunnel 7 by 12 feet from the West Gamma gangway on the north side of the basin to the Buck Mountain vein on the south side of No. 2 basin, distance of 394 feet. Drove a tunnel 7 by 12 feet from the bottom of the old inside Wharton slope south to the Buck Mountain vein, a distance of 366 feet, and erected concrete walls on each side of the mouth of the tunnel 40 feet long to support steel beams to secure the roof. Made a pump house for emergency pump, size 12 by 12 by 32 feet long. Made a column pipeway, size 6 by 6 by 77 feet long, on a pitch of 45 degrees in rock, and installed a pump and column pipe in the same. Sunk inside slope 145 feet long, 15 degrees, into an old basin to remove the pillars from the No. 1 Wharton slope, and put down a diamond drill hole 175 feet long to the Gamma vein below to carry away the water.

LEHIGH COAL AND NAVIGATION COMPANY

Cranberry Colliery.—July 1, 1916, this colliery passed into the hands of the Lehigh Coal and Navigation Company.

The Superintendent's office was first extended to accommodate the inside and outside foremen and all the clerical force.

The work of remodeling was begun on the east half of the breaker. This was finished so that it was put into operation in November. Installed two sets of Lloyd compound rolls, and 8 Lehigh Valley and 8 Simplex jigs.

A plane was constructed east of the breaker for facilitating the transportation of bank material for repreparation.

A large area west of No. 1 slope was proven and work begun in stripping of the Mammoth outcrop.

A new pump room was excavated in the rock between the Gamma and Wharton veins at No. 5, preparatory to the installation of electric pumps to replace those driven by steam. The column pipes from these pumps will reach the surface via No. 13 surface slope and a 60-foot rock hole.

An extension to No. 1 slope is being driven up from the 3rd level of No. 3 slope. This extension will be about 500 feet long and will reduce the haulage from that section of the mine about 2 miles.

Number 10 slope is being sunk to the No. 5 slope level. This will cut the present haulage about a mile and permit the robbing of a considerable area.

Lowering planes are being driven in the North Gamma and South Wharton sections to shorten haulage and obviate the present pitch roads.

Poles have been erected to carry power line of the Harwood Electric Company to electrify the hoists at Nos. 1, 5, 8 and 10 slopes and also Nos. 5 and 8 pumps.

The foundation is in for No. 8 electric hoist, and sub-station at No. 5 is begun.

A connecting road has been built to Harwood breaker, where the coal from Nos. 5, 8 and 10 is now being prepared.

EVANS COLLIERY COMPANY

Evans Colliery.—Widened out a mule way for use as a hoisting slope from No. 1 Gamma and sunk a slope from the surface a distance of 250 feet to No. 2 Gamma. Installed a 50 H. P. Westinghouse Flory electirc hoist to serve both slopes. Laid 1,200 feet of road consisting of 35 pound rails on the surface. Installed main and tail rope haulage to bring this coal to the breaker.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in the Y. M. C. A. building, June 6 and 7. The Board of Examiners was composed of J. J. Stickler, Mine Inspector, Hazleton; J. E. Anderson, Superintendent, Hazleton; Michael Flynn, Miner, Hazleton; Solomon Eli, Miner, Beaver Brook.

The following persons passed a satisfactory examination and were granted certificates:

MINE FOREMEN

John Callow, Summit Hill; Thomas J. Burns, Daniel Breslin, Oneida; Charles Rottet, Lansford; Harry Letcher, Cranberry.

ASSISTANT MINE FOREMEN

Frank D. Davis, John C. Barron, David J. Stevens, William Neal, James Monroe, David Monroe, Lansford; William Llewellyn, Summit Hill; William H. Donald, Nesquehoning; Andrew Malloy, Beaver Meadow.

SEVENTEENTH DISTRICT

CARBON AND SCHUYLKILL COUNTIES

Lansford, Pa., February 28th, 1917.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor of transmitting herewith my annual report as Inspector of Mines of the Seventeenth Anthracite District, for the year ending December 31, 1916.

Respectfully submitted,

ISAAC M. DAVIES,
Inspector.

40—3—1916

SUMMARY OF STATISTICS

Number of collieries,	5
Number of mines,	24
Number of mines in operation,	23
Number of gaseous mines in operation,	16
Number of non-gaseous mines in operation,	7
Number of tons of coal shipped to market,	3,115,503
Number of tons used at mines for steam and heat,	334,815
Number of tons sold to local trade and used by employes,	28,762
Number of tons produced,	3,479,080
Number of tons produced by compressed air machines,	.....
Number of tons produced by electrical machines,	.....
Number of persons employed inside of mines,	4,363
Number of persons employed outside,	1,859
Number of persons employed inside between 16 and 21 years,	209
Number of persons employed outside between 14 and 21 years,	438
Number of fatal accidents inside;	13
Number of fatal accidents outside,	6
Number of non-fatal accidents inside,	10
Number of non-fatal accidents outside,	3
Number of tons of coal produced per fatal accident inside,	267,622
Number of tons produced per fatal accident inside and outside,	183,109
Number of persons employed per fatal accident inside,	336
Number of persons employed per fatal accident outside,	310
Number of persons employed per fatal accident inside and outside,	327
Number of persons employed per non-fatal accident inside,	436
Number of persons employed per non-fatal accident outside,	620
Number of persons employed per non-fatal accident inside and outside,	479
Number of wives made widows,	12
Number of children made orphans,	34
Number of steam locomotives inside,	2
Number of steam locomotives outside,	36
Number of compressed air locomotives inside,	.....
Number of compressed locomotives outside,	.....
Number of electric motors inside,	73
Number of electric motors outside,	.....
Number of gasoline locomotives inside,	.....
Number of gasoline locomotives outside,	.....
Number of cylindrical boilers,	3
Number of tubular boilers,	77
Number of steam engines of all classes,	90

Number of internal combustion engines (gas),	.....
Number of electric dynamos,	.....
Number of pumps of all classes,	29
Number of pumps delivering water to surface,	23
Number of air compressors,	8
Number of fans in use,	14
Number of new mines opened,	1
Number of old mines abandoned,	2

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Lehigh Coal and Navigation Company,	3,479,080

Production by Counties

Carbon,	1,980,808
Schuylkill,	1,498,272
Total,	3,479,080

TABLE B.—Fatal and non-fatal accidents inside and outside of mines, number of tons of coal produced per accident, number of persons employed, number employed per accident

Names of Operators														
			Fatal Accidents			Non-fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Total number of employes	Number of employes inside per fatal accident	Number of employes outside per fatal accident	Number of employes inside per per non-fatal accident	Number of employes outside per non-fatal accident
			Inside	Outside	Total	Inside	Outside	Total									
Totals and averages,			13	6	19	10	3	13	267,622	347,908	4,363	1,859	6,222	336	310	436	620

TABLE C.—Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,				1					1				2	15.39
Falls of roof,	1				1							1	3	23.08
Mine cars,				1									1	7.69
Suffocation by gas, etc.,									1				1	7.69
Blasts, premature and otherwise,	1												1	7.69
Falling into shafts,			1										1	7.69
Crushed at batteries,			1										1	7.69
Electricity,							1				1		2	15.39
Rush of coal,							1						1	7.69
Totals,	2		2	2	1		2		2		1	1	13	100.00
Outside														
Cars,		1	1								2		4	66.67
Machinery,												1	1	16.67
Falling,								1					1	16.66
Totals,		1	1					1			2	1	6	100.00
Grand totals inside and outside,	2	1	3	2	1		2	1	2		3	2	19	

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of roof,							1						1	10.00
Mine cars,		1										1	2	20.00
Explosions of gas,	1												1	10.00
Explosion of powder and dynamite,			1										1	10.00
Crushed at batteries,												1	1	10.00
Struck by pipe,	1												1	10.00
Struck by something that fell down shaft,							1						1	10.00
Struck by lever,								1					1	10.00
Falling,								1					1	10.00
Totals,	2	1	1				2	2				2	10	100.00
Outside														
Cars,	1						1						2	66.66
Scalded by steam,											1		1	33.34
Totals,	1						1				1		3	100.00
Grand total inside and outside,	3	1	1				3	2			1	2	13	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,			1	1	1		1		2			1	7
Miners' laborers,							1				1		2
Muckers,	1												1
Chargemen,	1												1
Loaders,			1										1
Polemen,				1									1
Totals,	2		2	2	1		2		2		1	1	13
Outside													
Blacksmiths and carpenters,								1					1
Machinists and helpers,											1		1
Laborers,		1	1										2
Watchmen,											1		1
Oilers,												1	1
Totals,		1	1					1			2	1	6
Grand totals,	2	1	3	2	1		2	1	2		3	2	19

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,	2		1					1				1	5
Miners' laborers,		1					1					1	3
Loader bosses,							1	1					2
Totals,	2	1	1				2	2				2	10
Outside													
Engineers and firemen,											1		1
Laborers,	1						1						2
Totals,	1						1				1		3
Grand totals,	3	1	1				3	2			1	2	13

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,			1	1	1		1	1	1		1	1	8
Welsh,				1									1
Polish,			1									1	2
Italian,		1									1		2
Slavonian,	2		1								1		4
Russian,									1				1
Greek,							1						1
Totals,	2	1	3	2	1		2	1	2		3	2	19

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,		1					1	2			1	1	6
Irish,	1												1
Italian,							1						1
Slavonian,	1		1				1						3
Austrian,	1												1
Greek,												1	1
Totals,	3	1	1				3	2			1	2	13

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non gaseous	Number of Types of Safety Lamps Used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Lehigh Coal and Navigation Co. Nesquehoning Colliery:										
Number 1,	Carbon,	Little Buck Mountain	120				Tunnel,	Gaseous,	80	
		Seven Foot,	60							
		Skidmore,	30							
		Mammoth,	420							
		Holmes,	60							
		Primrose or 19 Foot,	240							
		Primrose or 39 Foot,	300							
		Orchard,	96							
		Primrose or Pencil,	180							
		Primrose or Vertical,	192							
		Buck Mountain,	156							
		Little Buck Mountain	120							
Number 2,	Carbon,	Holmes,	60	448				Gaseous,	88	
		Mammoth,	420							
		Skidmore,	30							
		Primrose or 19 Foot,	240							
		Primrose or 39 Foot,	300							
		Little Buck Mountain	156							
		Seven Foot,	60							
		Skidmore,	30							
		Mammoth or 28 Foot	420							
		Holmes,	60							

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number of Types of Safety Lamps Used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Number 1, Summit,	Carbon,	Primrose or 19 Foot,	240							
		Primrose or 39 Foot,	240							
		Primrose or Pencil,	168							
		Primrose or Vertical,	192							
		Mammoth or 50 Foot,	420							
		Mammoth or 28 Foot,	420							
		Skidmore,	26				Tunnel,	Non-gas.,	4	
		Primrose or 39 Foot,	129							
Lansford Colliery:		Mammoth No. 4,	540	1,000		70		Gaseous,	45	210
		Mammoth No. 4,	600		1,000					
		Mammoth No. 5,	600	538						
		Primrose 3rd Level,	216	538						
		Primrose 2nd Level,	216	336				Gaseous,	30	166
Lansford No. 6,	Carbon,	Mammoth,	600	538					30	30
		Primrose,	216	538						
		Mammoth Bottom Split	42	538						
		Mammoth Middle Split	84	538						
		Primrose,	132	1,000						
		Seven Foot,	84	1,000				Gaseous,	26	30
		Mammoth,	600							
		Orchard,								
Coaldale Colliery:										
Coaldale No. 8,	Carbon,	Mammoth 3rd Level,	600	294						
	Schuylkill,	Primrose 3rd Level,	180	294				Gaseous,	70	
		Mammoth 6th Level,	600	468				Gaseous,	60	

Coaldale No. 9,	Carbon, Schuylkill,	Mammoth,	720	468					
		Skidmore,	30	468					
		Primrose,	144	468			Drift,	Non-gas.,	
		Orchard,	96	468					
		Mammoth Bottom Split	120						
Greenwood Colliery:									
Greenwood No. 10,	Schuylkill,	Mammoth,	720	582					
		Mammoth or 40 Foot,	480	582				Gaseous,	132	300
		Primrose,	192	582					
Rahn Colliery:									
		Primrose N. Dip,	104	481				Gaseous,	98	200
		Orchard N. Dip,	96						
		Mammoth N. Dip,	288						
Rahn No. 11,	Schuylkill,	Mammoth Bottom Split	192	481				Gaseous,	81	110
		Primrose S. Dip,	104						
		Mammoth S. Dip,	288						
		Mammoth Bottom Split							
		Mammoth Bottom Split.	192	680				Gaseous,	14	30
Rahn, Fosters tunnel,	Schuylkill,		84						
		Mammoth Top Split,	288				Tunnel,		21	
		Primrose,	144						

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolution per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number inside	of persons employed
Lehigh Coal and Navigation Co. Nesquehoning Colliery:													
Number 1,	Carbon,	Little Buck Mountain Seven Foot, Skidmore, Mammoth, Holmes, Primrose or 19 Foot, Primrose or 39 Foot, Orchard, Primrose or Pencil, Primrose or Vertical, Buck Mountain, Little Buck Mountain					Natural,	93,425	128,380		20		353
Number 2,	Carbon,	Holmes, Mammoth, Skidmore, Primrose or 19 Foot, Primrose or 39 Foot, Little Buck Mountain Seven Foot, Skidmore, Mammoth or 28 Foot, Holmes, Primrose or 19 Foot, Primrose or 39 Foot,	Guibal,	24	90	2.5	Steam,	143,167	157,388	95,750	5		185

Number 1, Summit,	Carbon,	Primrose or Pencil, Primrose or Vertical, Mammoth or 50 Foot, Mammoth or 28 Foot, Skidmore, Primrose or 39 Foot,					Natural,	26,262	25,283	9,591	3	13
Lansford Colliery:												
Lansford No. 6,	Carbon,	Mammoth No. 4, Mammoth No. 4, Mammoth No. 5,	Sturtevant,	24	86	2.8	Electricity,	76,988	76,267	76,988	5	100
		Primrose 3rd Level, Primrose 2nd Level, Mammoth,	Sirocco,	9	168	2.2	Electricity,	71,668	71,710	17,917	4	148
		Primrose, Mammoth Bottom Split Mammoth Middle Split	Sirocco,	10	148	2.0	Electricity,	90,397	99,389	16,566	6	238
		Primrose, Seven Foot, Mammoth, Orchard,	Guibal,	22	50	1.0	Steam,	65,607	66,584	20,560	1	288
Coaldale Colliery:												
Coaldale No. 8,	Carbon, Schuylkill,	Mammoth 3rd Level, Primrose 3rd Level, Mammoth 6th Level,	Sturtevant, Guibal,	12 24	85 50	1.0 0.5	Steam, Steam,	34,220 65,607	38,650 81,000	11,406 14,095	3 3	60 136
Coaldale No. 9,	Carbon, Schuylkill,	Mammoth, Skidmore, Primrose, Orchard, Mammoth Bottom Split	Sirocco,	7	110		Steam,	12,200	13,000	14,022	1	29
Greenwood Colliery:												
Greenwood No. 10,	Schuylkill,	Mammoth, Mammoth or 40 Foot, Primrose,	Jeffrey,	10	172	2.4	Steam,	103,240	140,650	140,711	7	306
Rahn Colliery:												
Rahn No. 11,	Schuylkill,	Primrose N. Dip, Orchard N. Dip, Mammoth N. Dip, Mammoth Bottom Split	Jeffrey,	10	136	2.5	Electricity,	117,240	119,650	15,711	7	306
			Sirocco,	9	162	2.4		46,690	85,000	10,697	4	111
		Primrose S. Dip,					Natural,	14,130	16,410	13,910	1	33
		Mammoth S. Dip, Mammoth Bottom Split										
Rahn, Fosters tunnel,	Schuylkill,	Mammoth Bottom Split Mammoth Top Split, Primrose,	Guibal,	21	48	0.8	Steam,	30,880	33,150	10,293	3	70

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	Vice President	Postoffice	Superintendent	Postoffice	Railroad to Mine
Lehigh Coal and Navigation Company						
Nesquehoning,	Carbon,	E. Ludlow,	Lansford,	W. G. Whildin, Inside X. Leonarz, Outside	Lansford, Lansford,	L. and N. E. and C. R. R. of N. J.
Lansford,	Carbon,					
Coaldale,	Carbon – Schuylkill,					
Greenwood,	Schuylkill,					
Rahn,	Schuylkill,					
Washeries						
Coaldale,*	Schuylkill,					
Greenwood,	Schuylkill,					
Hauto,	Carbon,					

*Abandoned February 15, 1916.

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives: Pounds of black powder used	Explosives: Pounds of dynamite used	Explosives: Pounds of permissible explosives used
Lehigh Coal and Navigation Co.												
Nesquehoning,	Carbon,	758,504	65,999	6,745	831,248	250	1,334	5	3		236,461	123,544
Lansford,	Carbon,	670,253	134,983	7,013	812,249	238	1,747	6	5		229,561	93,474
Coaldale,	Carbon,	720,624	29,222	4,775	754,621	246	1,394	2	2		165,906	120,650
	Schuylkill,											
Greenwood,	Schuylkill,	385,619	33,988	7,720	427,327	236	725	3	2		98,767	49,900
Rahn,	Schuylkill,	493,776	36,716		440,492	251	843	3	1		94,016	46,467
Totals,		2,938,776	300,908	26,253	3,265,937		6,043	19	13		824,711	439,035
Washeries												
Coaldale, *	Schuylkill,	9,670	4,586		14,256	22	124					
Hauto,	Carbon,	167,057	29,321	2,509	198,887	251	55				13,000	
Totals,		176,727	33,907	2,509	213,143		179				13,000	
Grand totals,		3,115,503	334,815	28,762	3,479,080		6,222	19	13		837,711	436,035

*Abandoned February 15.

TABLE 2.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Names of Operators	County	Power Plant										Pumps				Haulage				Air Compressors	
		Boilers				Engines										Locomotives					
		Cylindrical		Tubular		Steam Engines (All Classes)		Internal Combustion Engines (Gas)		Electric Dynamos (All Classes)		Number	Total capacity in gallons per minute	Pumps Delivering Water to the Surface		Number of horses and mules				Number	Total capacity cubic feet per minute
		Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total watts			Number	Approximate number of gallons per minute		Steam	Air	Electric		
																	Gasoline				
Lehigh Coal and Navigation Co.	{Carbon, / Schuylkill, }	3	186	77	17,972	90	28,359	----	----	----	----	29	46,909	23	40,570	203	----	38	----	73	8	12,584

TABLE 3.—Part 1.—Number of each class of employes inside and outside of mines

Names of Operators	County		Lehigh Coal and Navigation Co.,	Carbon, Schuylkill,
Grand total inside and outside				6,222
Total outside				1,859
Outside		All other employes		874
		Office employes		35
		Slate pickers (men)		21
		Slate pickers (boys)		218
		Trackmen and helpers		35
		Machinists and helpers		172
		Engineers and firemen		277
		Blacksmiths and carpenters		208
		Foremen		15
		Superintendents		4
Total inside				4,363
Inside		All other employes		1,239
		Electricians and helpers		33
		Pumpmen and pipemen		6
		Timbermen and rockmen		1,102
		Trackmen and bratticemen		125
		Doorboys and helpers		25
		Motormen and assistants		163
		Drivers and runners		130
		Machine runners and scrapers		---
		Machine miners		---
		Miners' laborers		132
		Miners		1,304
		Fire bosses		59
		Assistant mine foremen		17
		Mine foremen		28

TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Total
Lehigh Coal and Navigation Co.	Carbon Schuylkill.	24	22	25	16	8	22	20	20	21	22	22	22	244

TABLE 4.—Fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 3	Joe. Matecek,	Slavonian,	Chargeman,	34	M.	1	5	Lansford,	Carbon,	Fatally injured by premature shot at face of chamber.
10	Joe. Vatick,	Slavonian,	Mucker,	35	M.	1	4	Greenwood,	Schuylkill,	Killed by fall of rock 10 feet from face of gangway.
Feb. 1	Sam. Venogal,	Italian,	Laborer,	55	M.	1		Nesquehoning,	Carbon,	Killed by being run over by lokie. Outside.
Mar. 6	Andrew Lewkish,	American,	Laborer,	18	S.			Nesquehoning,	Carbon,	Killed by being run over by car. Outside.
11	Steve Scraback,	Slavonian,	Miner,	33	M.	1	3	Greenwood,	Schuylkill,	Crushed by rock in battery.
24	Frank Phillips,	Polish,	Loader,	25	S.			Lansford,	Carbon,	Killed by falling from second to third level, No. 5 shaft.
April 19	Evan Thomas,	Welsh,	Miner,	31	M.	1	3	Rahn,	Schuylkill,	Killed by fall of coal at face of chute.
28	Byron Bond,	American,	Poleman,	18	S.			Nesquehoning,	Carbon,	Squeezed between car and timber on gangway.
May 31	Geo. Ronemus,	American,	Miner,	50	M.	1	1	Nesquehoning,	Carbon,	Killed by fall of roof at face of gangway.
July 14	John Kucher,	Greek,	Miner,	35	M.	1	2	Coaldale,	Carbon,	Electrocuted by coming in contact with electric wire on gangway.
26	Palmer Jones,	American,	Laborer,	19	S.			Rahn,	Schuylkill,	Suffocated by rush of coal and water in chute.
Aug. 12	Mike Dennis,	American,	Carpenter,	27	S.			Lansford,	Carbon,	Skull fractured by falling from head house. Outside.
Sept. 13	William Adams,	American,	Miner,	26	M.	1	2	Lansford,	Carbon,	Killed by fall of coal at face of chute.
16	Washington Bobbin,	Russian,	Miner,	28	M.	1	4	Rahn,	Schuylkill,	Suffocated by gas in chamber. He went into chamber with electric light.
Nov. 1	Toney Gall,	Italian,	Watchman,	24	S.			Nesquehoning,	Carbon,	Killed by being run over by lokie. Outside.
15	Henry Gilfert,	American,	Laborer,	35	M.	1	6	Greenwood,	Schuylkill,	Electrocuted by coming in contact with electric wire on gangway.
28	John Darko,	Slavonian,	Machinist,	32	M.	1	2	Lansford,	Carbon,	Crushed between gondola car and breaker. Outside.
Dec. 15	Alfred Echroade,	American,	Oiler,	21	S.			Coaldale,	Schuylkill,	Fatally injured. Caught on shaker shaft. Outside.
19	Joe. Boheneck,	Polish,	Miner,	36	M.	1	2	Lansford,	Carbon,	Squeezed to death by fall of roof on gangway while working over the collar.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 11	Charles Harmon,	Slavonian,	Laborer,	45	M.	Lansford,	Carbon,	Arm and three ribs fractured. Bumped by cars. Outside.
19	Paul Swartchick,	Austrian,	Miner,	31	M.	Nesquehoning,	Carbon,	Hands and face burned by explosion of gas in chute.
20	John Gallagher,	Irish,	Miner,	55	M.	Coaldale,	Schuylkill,	Leg fractured. Caught between air pipe and tool-box on gangway.
Feb. 2	James Breslin,	American,	Laborer,	36	S.	Lansford,	Carbon,	Pelvis fractured. Caught between car and gangway rib.
Mar. 11	Andrew Benny,	Slavonian,	Miner,	48	M.	Greenwood,	Schuylkill,	Hand shot off. Caught in battery.
July 7	Andrew Ferki,	Slavonian,	Laborer,	18	S.	Greenwood,	Schuylkill,	Great toe severed by barney while repairing plane. Outside.
10	James Marconie,	Italian,	Laborer,	25	S.	Coaldale,	Schuylkill,	Foot injured by fall of rock on tournout and had to be amputated.
14	Elmer Chrisman,	American,	Loader-boss,	25	M.	Lansford,	Carbon,	Skull fractured. Struck by something that fell down slope.
Aug. 4	John Callen,	American,	Miner,	45	M.	Nesquehoning,	Carbon,	Head and face cut and back sprained by falling down chute.
7	Jenkin Davis,	American,	Loader-boss,	28	M.	Nesquehoning,	Carbon,	Skull fractured. Struck by check lever in chute.
Nov. 22	Joseph Murphy,	American,	Fireman,	21	S.	Rahn,	Schuylkill,	Scalded by steam when pipes broke on lokie. Outside.
Dec. 29	Russel Williams,	American,	Laborer,	19	S.	Lansford,	Carbon,	Knee crushed between derailed car and gangway rib.
30	Andy Harnega,	Greek,	Miner,	31	M.	Lansford,	Carbon,	Arm broken by piece of rock falling on it in battery.

CONDITION OF COLLIERIES

LEHIGH COAL AND NAVIGATION COMPANY

Nesquehoning Colliery.—Ventilation, drainage, roads and general condition as to safety, good. The Orchard drift, Nesquehoning, near the Trolley Bridge, was started April 24, 1916.

Lansford Colliery.—Ventilation, generally good. Drainage, roads, and general condition as to safety, good.

Coaldale Colliery.—Ventilation, drainage and roads, generally, good. General condition as to safety, good. Coaldale slope was abandoned as a hoist for coal April 6, 1916.

Greenwood Colliery.—Ventilation and drainage, good. Roads and general condition as to safety, fair.

Rahn Colliery.—Ventilation, drainage and general condition as to safety, good. Roads fair.

IMPROVEMENTS

LEHIGH COAL AND NAVIGATION COMPANY

Nesquehoning Colliery.—Installed 3 centrifugal pumps for slush disposal. Rebuilt boiler house at breaker that was destroyed by fire March 25. Built narrow gauge railroad from foot of 50 foot plane to old No. 3 slope, for slope coal. Car transfer and barney plane at No. 2 shaft. Tunnel was driven in No. 2 shaft, 3rd level, 218 yards. A new concrete hospital was erected in the East Seven Foot gangway, near No. 11 Panel tunnel.

Lansford Colliery.—Installed slush separator in breaker, and new breaker engine; also 850 electric mine lamps, and mechanical box car loader. Track changes were made and two new type steam dumps were installed in No. 6 breaker. New sump and pump room, No. 4 shaft, 5th level, under construction. Tunnel was driven in No. 6 shaft, 4th level, 125 yards. Tunnel south to Orchard, No. 6 shaft, 3rd level, was completed, 87 yards. Made muleway, 4th to 3rd level, No. 6 shaft.

Coaldale Colliery.—No. 9 coal and water hoist engine houses are being made fireproof. Installed mechanical box car loader. Extension of No. 8 boiler house started.

No. 8 Mine. New shaft landing made on 7th level, 181 yards; also on 6th, 3rd and 1st level landings. Headframes, cages, ropes, engines, etc., were installed in new shaft. Electric fan and house nearly completed.

No. 9 Mine. Drove 411 yards Buck Mountain gangway, and tunnel under Springdale is also being driven. Built new fireproof lamphouse and put into service 500 electric mine lamps.

Rahn Colliery.—Steam dump was installed and track changes were made. Installed electric pump in 3rd level, new shaft, and electric pump in 2nd level; also 500 electric mine lamps. Steam heating plant was installed for outside buildings. Airway in Diamond vein

to surface was completed. Single track tunnel was driven in 3rd level, 540 yards. Shelter-house and bridge built over track at new shaft.

A new washery was started at Ashton. Narrow gauge railroad was built connecting Coaldale Colliery general storehouse and Lansford Colliery. A motor ambulance was installed. The old car barn is being remodeled for mine car repair shop.

EIGHTEENTH DISTRICT

SCHUYLKILL COUNTY

Pottsville, Pa., February 23, 1917.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I transmit herewith my annual report as Inspector of Mines of the Eighteenth Anthracite District for the year ending December 31, 1916.

Respectfully submitted,

KIERNAN DONAHUE,
Inspector.

SUMMARY OF STATISTICS

Number of collieries,	14
Number of mines,	33
Number of mines in operation,	33
Number of gaseous mines in operation,	19
Number of non-gaseous mines in operation,	14
Number of tons of coal shipped to market,	2,901,402
Number of tons used at mines for steam and heat,	416,380
Number of tons sold to local trade and used by employes,	47,875
Number of tons produced,	3,365,657
Number of tons produced by compressed air machines,	.....
Number of tons produced by electrical machines,	.....
Number of persons employed inside of mines,	3,848
Number of persons employed outside,	1,851
Number of persons employed inside between 16 and 21 years,	168
Number of persons employed outside between 14 and 21 years,	471
Number of fatal accidents inside,	18
Number of fatal accidents outside,	5
Number of non-fatal accidents inside,	62
Number of non-fatal accidents outside,	19
Number of tons of coal produced per fatal accident inside,	186,981
Number of tons produced per fatal accident inside and outside,	146,333
Number of persons employed per fatal accident inside,	214
Number of persons employed per fatal accident outside,	370
Number of persons employed per fatal accident inside and outside,	248
Number of persons employed per non-fatal accident inside,	62
Number of persons employed per non-fatal accident outside,	97
Number of persons employed per non-fatal accident inside and outside,	70
Number of wives made widows,	13
Number of children made orphans,	26
Number of steam locomotives inside,	.....
Number of steam locomotives outside,	40
Number of compressed air locomotives inside,	7
Number of compressed air locomotives outside,	.....
Number of electric motors inside,	26
Number of electric motors outside,	2
Number of gasoline locomotives inside,	2
Number of gasoline locomotives outside,	.....
Number of cylindrical boilers,	2
Number of tubular boilers,	151
Number of steam engines of all classes,	250

Number of internal combustion engines (gas),	.....
Number of electric dynamos,	6
Number of pumps of all classes,	100
Number of pumps delivering water to surface,	38
Number of air compressors,	18
Number of fans in use,	23
Number of new mines opened,	.....
Number of old mines abandoned,	.....

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Philadelphia and Reading Coal and Iron Company, ..	1,169,595
Dodson Coal Company, ...	404,510
St. Clair Coal Company, ...	368,415
Lehigh Coal and Navigation Company, ...	343,088
Lehigh Valley Coal Company, ...	298,883
Maryd Coal Company, ...	285,417
Mill Creek Coal Company, ...	170,770
Mt. Hope Coal Company, ...	114,414
East Lehigh Coal Company, ...	88,056
Cumbola Coal Company, ...	58,820
Port Carbon Coal Company, ...	38,137
Gorman and Campion, ...	17,102
Slattery Brothers, ...	8,450
Total, ...	3,365,657

Production by Counties

Schuylkill, ...	3,365,657

TABLE B.—Fatal and non-fatal accidents inside and outside of mines, number of tons of coal produced per accident, number of persons employed, number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Total number of employes	Number of employes inside per fatal accident	Number of employes outside per fatal accident	Number of employes inside per non-fatal accident	Number of employes outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Philadelphia and Reading Coal and Iron Co.,	8	1	9	22	7	29	146,199	53,163	1,392	476	1,868	174	476	63	68
Dodson Coal Co.,	------	------	------	4	2	6	------	101,128	380	180	560	------	------	95	90
St. Clair Coal Co.,	1	------	1	7	3	10	368,415	52,631	413	287	700	413	------	59	96
Lehigh Coal and Navigation Co.,	1	------	1	16	5	21	343,088	21,443	504	246	750	504	------	32	49
Lehigh Valley Coal Co.,	2	------	2	6	1	7	149,442	49,814	491	130	621	246	------	82	130
Maryd Coal Co.,	3	1	4	5	------	5	95,139	57,083	286	156	442	95	156	57	------
Mill Creek Coal Co.,	1	1	2	1	------	1	170,770	170,770	145	137	282	145	137	145	------
Mt. Hope Coal Co.,	------	1	1	1	1	2	------	114,414	60	88	148	------	88	60	88
Port Carbon Coal Co.,	2	------	2	------	------	------	19,069	------	47	25	72	24	------	------	------
Gorman and Campion,	------	1	1	------	------	------	------	------	32	24	56	------	24	------	------
Miscellaneous Companies,	------	------	------	------	------	------	------	------	98	102	200	------	------	------	------
Totals and averages,	18	5	23	62	19	81	186,981	54,285	3,848	1,851	5,699	214	370	62	97

TABLE C.—Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,	1		1	1	1	1		2		1			8	44.44
Falls of slate,			1				1						2	11.11
Falls of roof,			1										1	5.56
Mine cars,							1			1			2	11.11
Explosions of gas,	1												1	5.56
Suffocation by gas, etc.,												3	3	16.66
Ruptured while lifting prop,											1		1	5.56
Totals,	2		3	1	1	1	2	2		2	1	3	18	100.00
Outside														
Cars,	1									1			2	40.00
Machinery,			1										1	20.00
Struck by frozen earth,			1										1	20.00
Burned by boilers,	1												1	20.00
Totals,	2		2							1			5	100.00
Grand totals,	4		5	1	1	1	2	2		3	1	3	23	

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,			1	2		1	1				1		6	9.68
Falls of roof,				1			1		1	5	1		9	14.52
Mine cars,	1	2	1		1		2	1	1		1	3	13	20.97
Explosions of gas,	3			5					1		2		11	17.75
Explosions of powder and dynamite,			1										1	1.61
Blasts, premature and otherwise,								1	1				2	3.23
Mules,			1										1	1.61
Struck by piece of rock,			1										1	1.61
Struck by piece of coal,			1	1	1	1							4	6.46
Struck by rail,									1				1	1.61
Struck by hatchet,	1												1	1.61
Struck by timber,	1		1			1							3	4.84
Caught by rope,												1	1	1.61
Caught by chain,											1		1	1.61
Caught by sprag,							1						1	1.61
Rush of dirt,								1					1	1.61
Rush of coal,							1						1	1.61
Rush of water,								1					1	1.61
Falling off platform,		1											1	1.61
Falling,		1				1							2	3.23
Totals,	6	4	7	9	2	4	6	4	5	5	6	4	62	100.00
Outside														
Cars,		1			1	2			1	2	1		8	42.11
Machinery,		1			1							2	4	21.06
Struck by rope,					1								1	5.26
Struck by piece of steel,			1			1							2	10.53
Struck by piece of rock,	1												1	5.26
Struck by platform plate,										1			1	5.26
Struck by hatchet,							1						1	5.26
Caught by chute,												1	1	5.26
Totals,	1	2	1		3	3	1		1	3	1	3	19	100.00
Grand totals,	7	6	8	9	5	7	7	4	6	8	7	7	81	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,	2	----	2	1	1	1	----	2	----	1	1	3	14
Miners' laborers,	----	----	1	----	----	----	2	----	----	----	----	----	3
Patchers,	----	----	----	----	----	----	----	----	----	1	----	----	1
Totals,	2	----	3	1	1	1	2	2	----	2	1	3	18
Outside													
Slatepickers (boys),	----	----	1	----	----	----	----	----	----	----	----	----	1
Topmen,	1	----	----	----	----	----	----	----	----	----	----	----	1
Ashmen,	1	----	----	----	----	----	----	----	----	----	----	----	1
Bankmen,	----	----	1	----	----	----	----	----	----	----	----	----	1
Laborers,	----	----	----	----	----	----	----	----	----	1	----	----	1
Totals,	2	----	2	----	----	----	----	----	----	1	----	----	5
Grand totals,	4	----	5	1	1	1	2	2	----	3	1	3	23

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Fire bosses,	1	----	----	----	----	----	----	----	----	----	----	----	1
Miners,	3	2	3	7	1	1	2	2	3	----	5	----	29
Miners' laborers,	----	----	3	1	----	1	----	1	1	----	1	----	8
Machine runners and scrapers,	----	----	----	1	----	----	----	----	----	----	----	1	2
Drivers and runners,	1	2	----	----	----	----	2	----	----	4	----	1	10
Motormen and assistants,	----	----	1	----	----	----	1	----	----	----	----	----	2
Trackmen and bratticemen,	1	----	----	----	----	----	----	----	----	----	----	----	1
Timbermen and rockmen,	----	----	----	----	----	1	----	----	----	----	----	----	1
Footmen,	----	----	----	----	----	1	----	----	----	----	----	----	1
Loaders,	----	----	----	----	1	----	1	1	----	----	----	1	4
Switchmen,	----	----	----	----	----	----	----	----	----	1	----	----	1
Dumpmen,	----	----	----	----	----	----	----	----	1	----	----	----	1
Hitchers,	----	----	----	----	----	----	----	----	----	----	----	1	1
Totals,	6	4	7	9	2	4	6	4	5	5	6	4	62
Outside													
Blacksmiths and carpenters,	----	----	----	----	----	1	1	----	----	----	----	----	2
Engineers and firemen,	----	----	----	----	1	----	----	----	----	----	----	1	2
Slatepickers (boys),	----	----	----	----	1	----	----	----	----	----	----	----	1
Platform men,	----	----	----	----	----	----	----	----	----	1	----	1	2
Chute bosses,	----	----	1	----	----	1	----	----	----	----	----	----	2
Jig runners,	----	1	----	----	----	----	----	----	----	----	----	----	1
Bankmen,	----	1	----	----	----	----	----	----	----	----	----	----	1
Car cleaners,	----	----	----	----	----	1	----	----	----	----	----	----	1
Runners,	----	----	----	----	----	----	----	----	----	2	----	----	2
Loaders,	----	----	----	----	----	----	----	----	1	----	1	----	2
Laborers,	1	----	----	----	1	----	----	----	----	----	----	1	3
Totals,	1	2	1	----	3	3	1	----	1	3	1	3	19
Grand totals,	7	6	8	9	5	7	7	4	6	8	7	7	81

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	2									1			3
Polish,	1			1									2
Hungarian,			1							1			2
Slavonian,	1		1					1				1	4
Lithuanian,			1		1		2	1		1		2	8
Austrian,			1			1							2
Russian,			1								1		2
Totals,	4		5	1	1	1	2	2		3	1	3	23

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	4	3	2	2	1	5	5	1	2	7	2	6	40
English,											1		1
Irish,											1		1
Polish,	1		1	1	1				2		1		7
Italian,	1												1
Slavonian,		1	2	1	2				2	1		1	10
Lithuanian,		1		3		2	2	1			1		10
Austrian,		1	1	1	1			2					6
Russian,	1		2								1		4
Tyrolean,				1									1
Totals,	7	6	8	9	5	7	7	4	6	8	7	7	81

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number ofsplits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening: Shaft Depth	Slope (Coal or Rock) Length	Slope (Coal or Rock) Average pitch—degrees	Drift	Gaseous or non-gaseous	Number and Types of Safety Lamps Used: Flame	Number and Types of Safety Lamps Used: Electric
Philadelphia and Reading Coal and Iron Co.										
Silver Creek Colliery:										
Silver Creek,	Schuylkill,			917				Gaseous,	184	24
Silver Creek No. 4,							Drift,	Non-gas.,		
Silver Creek No. 1,							Drift,	Non-gas.,		
Eagle Hill Colliery:										
Eagle Hill,	Schuylkill,			1,038	1,715	31		Gaseous,	127	
Eagle Hill,							Drift,	Non-gas.,		
Eagle Hill,							Drift,	Non-gas.,		
Wadesville Colliery:										
Wadesville,	Schuylkill,			548				Gaseous,		
Wadesville,				760						
Wadesville,					900	5				
Wadesville,					950	45				
Wadesville,							Drift,			
Wadesville,							Drift,			
Dodson Coal Co.										
Morea Colliery:										
Morea,	Schuylkill,		860	408				Gaseous,		
Morea,					650	40		Gaseous,		
St. Clair Coal Co.										
St. Clair Colliery:										
St. Clair,	Schuylkill,				2,000	14		Gaseous,	110	
St. Clair,								Non-gas.,		

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and Types of Safety Lamps Used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Lehigh Coal and Navigation Co. Tamaqua Colliery:										
Tamaqua,	Schuylkill,	Orchard,	60	406				Gaseous,	75	151
		Primrose,	144							
		Top Split,	236							
		Bottom Split,	168							
		Buck Mountain,	120							
Tamaqua,	Schuylkill,	Primrose,	144	588				Gaseous,	120	257
		Top Split,	236							
		Middle Split,	60							
		Bottom Split,	168							
		Skidmore,	16							
		Seven Foot,	132							
		Buck Mountain,	120							
Lehigh Valley Coal Co. Buck Mountain Colliery:										
Buck Mountain,	Schuylkill,	Buck Mountain,	96		1,700	26		Gaseous,	6	
Buck Mountain Vulcan,		Buck Mountain,	96		1,700	32		Gaseous,	43	
Maryd Coal Co. Maryd Colliery:										
Maryd,	Schuylkill,	Orchard,	67	624				Gaseous,	85	
		Primrose,	72							
		Holmes,	120							
		Four Foot,	36							

Middle Creek Coal Co.										
Middle Lehigh Colliery:										
Middle Lehigh No. 3,	Schuylkill,	Buck Mountain,	144		1,000	28		Gaseous,		
Middle Lehigh No. 11,		Seven Foot,	36		545	24		Non-gas.,		
		Skidmore,	72							
Middle Lehigh No. 12,		Mammoth,	84		200	24		Non-gas.,		
Wolf Creek Colliery:										
Wolf Creek,	Schuylkill,			120				Non-gas.,		
Wolf Creek,		Buck Mountain,	54				Drift,	Non-gas.,		
Wolf Creek,		Skidmore,	84		375	36		Non-gas.,		
Mt. Hope Coal Co.										
Mt. Hope Colliery:										
Mt. Hope No. 8,	Schuylkill,	Mammoth,	144		350	18		Non-gas.,		
Mt. Hope No. 9,		Mammoth,	144		400	18		Non-gas.,		
Mt. Hope No. 12,		Mammoth,	144		150	18		Non-gas.,		
East Lehigh Coal Co.										
East Lehigh Colliery:										
East Lehigh,	Schuylkill,				300	79		Gaseous,		
Port Carbon Coal Co.										
Lucy R Colliery:										
Lucy R,	Schuylkill,	Mammoth,	96		210	30		Gaseous,	12	
Gorman and Campion										
Bell Colliery:										
Bell,	Schuylkill,							Non-gas.,		

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Philadelphia and Reading Coal and Iron Co.												
Silver Creek Colliery:												
Silver Creek,	Schuylkill,		Guibal,	21	80	1.	Steam,	80,200	83,500	5,580	10	497
Silver Creek No. 4,			Guibal,	21	70	1.2	Steam,	75,800	80,000	5,560	10	
Silver Creek No. 1,							Natural,					
Eagle Hill Colliery:												
Eagle Hill,	Schuylkill,		P. and R.,	20	85	2.3	Steam,	102,000	104,000	8,540	10	263
Eagle Hill,			Guibal,	8	80	.6	Electricity,	14,500	15,000	13,600	1	
Eagle Hill,			Guibal,	8	80	.6	Electricity,	27,200	31,300	5,020	5	
Wadesville Colliery:												
Wadesville,	Schuylkill,		6 Guibal,	21	116	3.	Steam,	223,445	251,530	160,067	31	434
Wadesville,												
Wadesville,												
Wadesville,												
Wadesville,												
Wadesville,												
Dodson Coal Co.												
Morea Colliery:												
Morea,	Schuylkill,		Guibal,	18	80	1.	Steam,	41,170	136,560	43,560	10	380
Morea,			Guibal,	18	80	.9	Electricity,					
St. Clair Coal Co.												
St. Clair Colliery:												
St. Clair,	Schuylkill,			16	65	.4						
St. Clair,			Guibal,	14	90	1.2	Steam,	107,170	316,630	80,120	5	413
							Natural,					

Lehigh Coal and Navigation Co.													
Tamaqua Colliery:													
Tamaqua,	Schuylkill,	Orchard, Primrose, Top Split, Bottom Split, Buck Mountain,	Guibal,	29	98	2.	Electricity,	87,000	88,200	87,000	9	144
Tamaqua,	Schuylkill,	Primrose, Top Split, Middle Split, Bottom Split, Skidmore, Seven Foot, Buck Mountain,	Guibal,	20	68	1.4	Steam,	85,000	86,000	85,000	10	255
Lehigh Valley Coal Co.													
Buck Mountain Colliery:													
Buck Mountain,	Schuylkill,	Buck Mountain,	Guibal,	20	70	1.	Steam,	116,000	77,000	116,000	10	198
Buck Mountain Vulcan,		Buck Mountain,	Guibal,	25	65	1.6	Steam,	97,000	45,000	97,000	13	226
Maryd Coal Co.													
Maryd Colliery:													
Maryd,	Schuylkill,	Orchard,	Guibal,	16	80	1.8	Steam,	30,000	30,000	2,000	3	130
		Primrose,	Guibal,	18	70	1.75	Steam,	42,240	42,240	1,500	1	40
		Holmes,	Guibal,	16	65	1.75	Steam,	22,000	22,000	1,500	1	30
		Four Foot,	Guibal,	20	80	2.	Steam,	80,000	80,000	2,500	2	86
Middle Creek Coal Co.													
Middle Lehigh Colliery:													
Middle Lehigh No. 3,	Schuylkill,	Buck Mountain, Seven Foot,	Guibal,	16	80	.4	Steam,	75,000	85,000	5,000	------	61
Middle Lehigh No. 11,		Skidmore,										
Middle Lehigh No. 12,		Mammoth,					Natural,					
Wolf Creek Colliery:													
Wolf Creek,	Schuylkill,		Guibal,	16	68	1.2	Steam,	57,200	60,600	10,600	4	63
Wolf Creek,		Buck Mountain,					Natural,					
Wolf Creek,		Skidmore,					Natural,					
Mt. Hope Coal Co.													
Mt. Hope Colliery:													
Mt. Hope No. 8,	Schuylkill,	Mammoth,					Natural,					25
Mt. Hope No. 9,		Mammoth,					Natural,					33
Mt. Hope No. 12,		Mammoth,					Natural,					2
East Lehigh Coal Co.													
East Lehigh Colliery:													
East Lehigh,	Schuylkill,		Guibal,	10	85	.5	Steam,	10,000	9,000	3,000	3	95
				14	90	.7	Steam,	11,000	8,500	2,500		

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Port Carbon Coal Co.												
Lucy R Colliery:												
Lucy R,	Schuylkill,	Mammoth,	Guibal,	10	140	1.8	Natural,	30,000	30,000	20,000	3	47
Gorman and Campion												
Bell Colliery:												
Bell,	Schuylkill,						Steam,	16,500	17,000	15,800	1	32

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	General Superintendent	Post Office	Superintendent	Post Office	Railroad to Mine
Philadelphia and Reading Coal and Iron Co.						
Silver Creek, Eagle Hill, Wadesville,	Schuylkill,	G. B. Hadesty,	Pottsville,	Claude F. Lewis, Division Supt. David Jones, Inside District Supt. William Tiley, Outside Dist. Supt.	Pottsville,	P. and R.
Dodson Coal Co.						
Morea,	Schuylkill,	J. B. Connell,	Beaver Brook,	William McGinley,	Morea,	L. V., Penna., and P. and R.
St. Clair Coal Co.						
St. Clair,	Schuylkill,			W. T. Smythe,	St. Clair,	P. and R.
Lehigh Coal and Navigation Co.						
Tamaqua,	Schuylkill,	E. Ludlow, Vice, President	Lansford,	W. G. Whildin, Inside Supt. A. Leonarz, Outside Supt.	Lansford,	L. and N. E.
Lehigh Valley Coal Co.						
Buck Mountain,	Schuylkill,	Thomas Thomas,	Wilkes-Barre,	Dellwyn S. Wolfe,	Mahanoy City,	Lehigh Valley
Maryd Coal Co.						
Maryd,	Schuylkill,	T. E. Snyder,	Hazleton,	Arthur Kennedy,	Maryd,	P. and R. and C. R. R. of N. J.
Mill Creek Coal Co.						
Middle Lehigh, Wolf Creek,	Schuylkill,	T. D. Jones,	New Boston,	J. E. Jones,	New Boston,	L. V., and Penna. Pennsylvania
Mt. Hope Coal Co.						
Mt. Hope,	Schuylkill,	I. D. Beahme,	St. Clair,			P. and R.
East Lehigh Coal Co.						
East Lehigh,	Schuylkill,	E. M. B. Shepp,	Tamaqua,	E. M. B. Shepp,	Tamaqua,	L. and N. E.

TABLE 1.—Continued

Names of Operators and Collieries	County	General Superintendent	Post Office	Superintendent	Post Office	Railroad to Mine
Cumbola Coal Co. Cumbola Washery,	Schuylkill,	George M. Keiser,	Pottsville,	George D. Evans,	Pottsville,	P. and R.
Port Carbon Coal Co. Lucy R,	Schuylkill,	Peter Haley,	Port Carbon,	Peter Haley,	Port Carbon,	P. and R.
Gorman and Campion Bell,	Schuylkill,	Daniel J. Slattery,	Tuscarora,	Daniel J. Slattery,	Tuscarora,	P. and R.
Slattery Brothers Tamaqua Washery,	Schuylkill,	Daniel J. Slattery,	Tuscarora,	Daniel J. Slattery,	Tuscarora,	P. and R.

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives: Pounds of black powder used	Explosives: Pounds of dynamite used	Explosives: Pounds of permissible explosives used
Philadelphia and Reading Coal and Iron Co.												
Silver Creek,	Schuylkill,	494,045	39,234	5,193	538,472	272	921	2	8	8,625	136,755	126,430
Eagle Hill,		220,720	34,008	4,124	258,852	272	389	2	8	100	44,446	47,760
Wadesville,		324,686	44,939	2,646	372,271	286	558	5	13	6,325	44,445	117,210
Totals,		1,039,451	118,181	11,963	1,169,595	------	1,868	9	29	15,050	225,646	291,400
Dodson Coal Co.												
Morea,	Schuylkill,	360,296	43,000	1,214	404,510	284	560	----	6	1,900	125,274	----------
St. Clair Coal Co.												
St. Clair,	Schuylkill,	288,623	70,860	8,932	368,415	283	700	1	10	280,475	104,875	----------
Lehigh Coal and Navigation Co.												
Tamaqua,	Schuylkill,	280,589	56,726	5,773	343,088	231	750	1	21	----------	153,621	48,150
Lehigh Valley Coal Co.												
Buck Mountain,	Schuylkill,	267,414	30,541	928	298,883	247	621	2	7	29,625	17,223	134,400
Maryd Coal Co.												
Maryd,	Schuylkill,	236,361	46,772	2,284	285,417	211	442	4	5	----------	----------	122,331

TABLE 2.—Part 1.—Continued

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives		
										Pounds of black powder used	Pounds of dynamite used	Pounds of permissible explosives used
Mill Creek Coal Co.												
Middle Lehigh,	Schuylkill,	89,140	23,400	666	113,206	257	194	2	1	26,400	20,470	
Wolf Creek,		53,914	3,650		57,564	262	88			9,000	44,606	
Totals,		143,054	27,050	666	170,770		282	2	1	35,400	65,076	
Mt. Hope Coal Co.												
Mt. Hope,	Schuylkill,	100,952	8,400	5,062	114,414	239	148	1	2		3,700	
East Lehigh Coal Co.												
East Lehigh,	Schuylkill,	66,593	10,800	10,663	88,056	278	171					40,775
Cumbola Coal Co.												
Cumbola Washery,	Schuylkill,	57,380	1,400	40	58,820	262	20					
Port Carbon Coal Co.												
Lucy R.,	Schuylkill,	37,307	700	130	38,137	248	72	2			6,825	
Gorman and Campion												
Bell,	Schuylkill,	15,382	1,500	220	17,102	215	56	1			12,000	
Slattery Brothers												
Tamaqua Washery,	Schuylkill,	8,000	450		8,450	159	9					
Grand totals,		2,901,402	416,380	47,875	3,365,657		5,699	23	81	362,450	714,240	637,056

TABLE 2.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Names of Operators	County	Power Plant										Pumps				Haulage					Air Compressors	
		Boilers				Engines								Pumps Delivering Water to the Surface			Locomotives					
		Cylindrical		Tubular		Steam Engines (All Classes)		Internal Combustion Engines (Gas)		Electric Dynamos (All Classes)												
		Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total watts Kilo-	Number	Total capacity in gallons per minute	Number	Approximate number of gallons per minute	Number of horses and mules	Gasoline	Steam	Air	Electric	Number	Total capacity cubic feet per minute
Philadelphia and Reading Coal and Iorn Co.,																						
Dodson Coal Co.,				43	6,470	113	16,154			3	390	43	21,227	7	3,782	167		9	4	4	6	4,667
St. Clair Coal Co.,				23	2,255	19	2,000			1	100	6	11,000	5	4,500	38		1		8	2	1,200
Lehigh Coal and Navigation Co.,		2	400	18	2,700	22	1,500					4	3,000	4	2,250	45		13		6		
Lehigh Valley Coal Co.,				10	2,700	12	4,535					6	11,150	4	10,000	19		3		8	2	2,200
Maryd Coal Co.,				7	2,100	21	6,510			1	12	13	12,800	2	3,000	63		3	3		2	1,190
Mill Creek Coal Co.,	Schuylkill,			12	2,100	17	2,480					7	5,000	5	1,500	47	2	2			2	1,700
Mt. Hope Coal Co.,				20	2,850	15	2,050					9	14,000	7	3,500	46		5			2	800
East Lehigh Coal Co.,				7	800	11	725									6		4				
Cumbola Coal Co.,				3	650	10	567					7	2,500	2	800	24						
Port Carbon Coal Co.,				2	200	3	75					3	1,000									
Gorman and Campion,				2	150							2	350	2	350	6				2	1	100
Slattery Brothers,				2	175	5	250			1	250										1	100
				2	100	2	50															
Totals,		2	400	151	23,250	250	36,896			6	752	100	82,027	38	29,682	461	2	40	7	28	18	11,957

TABLE 3.—Part 1.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside																			Outside										Total outside	Grand total inside and outside
		Mine foremen	Assistant mine foremen	Fire bosses	Miners	Miners' laborers	Machine miners	Machine runners and scrapers	Drivers and runners	Motormen and assistants	Doorboys and helpers	Trackmen and bratticemen	Timbermen and rockmen	Pumpmen and pipemen	Electricians and helpers	All other employes	Total inside	Superintendents	Foremen	Engineers and firemen	Blacksmiths and carpenters	Machinists and helpers	Trackmen and helpers	Slate pickers (boys)	Slate pickers (men)	Office employes	All other employes	Total outside	Grand total inside and outside
Philadelphia and Reading Coal and Iron Co.,	Schuylkill,	6	31	----	667	177	----	----	95	----	1	66	114	----	----	235	1,392	----	3	19	67	14	6	59	9	13	286	476	1,868
Dodson Coal Co.,		1	1	6	170	36	----	----	19	23	3	17	39	13	5	47	380	1	1	26	36	8	----	22	13	8	65	180	560
St. Clair Coal Co.,		2	----	8	170	92	----	----	22	12	6	8	6	4	----	83	413	1	3	21	45	4	3	33	18	4	155	287	700
Lehigh Coal and Navigation Co.,		3	3	10	176	32	----	----	14	19	5	6	126	----	3	107	504	1	2	16	43	14	4	28	2	4	132	246	750
Lehigh Valley Coal Co.,		2	17	----	306	70	----	----	23	----	9	23	6	2	----	33	491	----	1	16	19	2	1	9	----	4	78	130	621
Maryd Coal Co.,		1	1	8	141	66	----	----	22	2	4	6	15	4	----	16	286	1	2	11	28	2	5	22	----	3	82	156	442
Mill Creek Coal Co.,		2	3	1	80	20	----	----	14	----	1	4	8	5	----	7	145	1	2	10	31	4	----	3	11	5	70	137	282
Mt. Hope Coal Co.,		1	----	----	23	28	----	----	3	----	----	----	5	----	----	----	60	1	2	4	14	4	3	5	1	1	53	88	148
East Lehigh Coal Co.,		1	----	1	42	27	----	----	10	----	1	2	4	3	----	7	98	1	1	2	9	2	5	10	----	2	41	73	171
Cumbola Coal Co.,		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	1	----	2	----	----	3	----	----	13	20	20
Port Carbon Coal Co.,		1	----	1	24	8	----	----	2	4	----	----	4	2	----	1	47	1	1	2	5	----	----	6	----	----	10	25	72
Gorman and Campion,		1	1	----	16	4	----	----	4	----	1	----	----	----	----	5	32	1	1	3	6	----	----	6	----	1	6	24	56
Slattery Brothers,		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	----	2	----	----	----	----	----	6	9	9
Totals,	----	21	57	35	1,815	560	----	----	228	60	31	132	327	33	8	541	3,848	10	21	130	307	54	27	206	54	45	997	1,851	5,699

TABLE 3—Part 2.

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Totals
Philadelphia and Reading Coal and Iron Co.,	Schuylkill,	24	24	26	18	19	24	24	21	24	25	23	25	277
Dodson Coal Co.,		25	25	25	14	21	26	22	26	25	25	25	25	284
St. Clair Coal Co.,		22	23	23	19	25	25	19	27	25	25	25	25	283
Lehigh Coal and Navigation Co.,		23	20	24	9	8	24	18	17	22	22	22	22	201
Lehigh Valley Coal Co.,		17	18	19	16	18	23	20	22	25	24	23	22	247
Maryd Coal Co.,		18	18	18	12	17	19	14	17	21	20	19	18	211
Mill Creek Coal Co.,		23	23	24	17	23	23	22	22	20	23	17	22	259
Mt. Hope Coal Co.,		21	24	24	14	2	22	10	24	23	24	27	24	239
East Lehigh Coal Co.,		24	23	27	22	26	22	19	19	24	25	24	23	278
Port Carbon Coal Co.,		24	24	27	19	18	21	22	14	17	21	20	21	248
Gorma nand Campion,		10	21	17	17	15	16	14	20	21	20	24	16	215

TABLE 4.—Fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 3	Paul Crintsch,	Polish,	Ashman,	27	S.			Middle Lehigh,		Fatally burned by falling off plank onto boilers. Outside.
8	Samuel Garland,	American,	Miner,	37	M.	1	5	Wadesville,		Fatally injured by explosion of gas in chamber.
15	John Cornishen,	Slavonian,	Miner,	35	M.	1	3	Maryd,		Instantly killed by fall of coal near face of chamber.
17	Samuel Carby,	American,	Topman,	45	S.			Wadesville,		Fatally injured. Caught between car and iron girder. Outside.
Mar. 20	John Yacus,	Lithuanian,	Slatepicker,	15	S.			Bell,		Fatally injured. Crushed by machinery in breaker. Outside.
22	Lew Stenick,	Austrian,	Miner,	24	S.			Wadesville,		Fatally injured by fall of roof at face of pillar.
24	Joseph Konopis,	Hungarian,	Bankman,	40	S.			Mt. Hope,		Fatally injured. Struck by frozen earth. Outside.
	John Plasho,	Slavonian,	Laborer,	40	M.	1	4	St. Clair,		Fatally injured by fall of slate at face of gangway.
25	Mike Tomalonis,	Russian,	Miner,	48	M.	1		Buck Mountain,	Schuylkill,	Fatally injured by fall of coal in pillar workings.
April 12	John Garber,	Polish,	Miner,	42	M.	1		Middle Lehigh,		Fatally injured by fall of coal at face of chamber.
May 9	George Turza,	Lithuanian,	Miner,	33	M.	1	3	Wadesville,		Fatally injured by fall of coal in pillar workings.
June 16	John Matlock,	Austrian,	Miner,	45	M.	1	4	Wadesville,		Fatally injured by fall of coal at face of chamber.
July 6	William Warnuskie,	Lithuanian,	Laborer,	55	M.	1		Lucy R,		Fatally injured. Caught between car and prop on haulage-road.
25	Matt Yascarage,	Lithuanian,	Laborer,	24	S.			Eagle Hill,		Fatally injured by fall of slate at face of gangway.
Aug. 14	John Navitskey,	Slavonian,	Miner,	31	S.			Maryd,		Fatally injured by fall of coal at face of heading.
29	Peter Carnunis,	Lithuanian,	Miner,	27	S.			Tamaqua,		Fatally injured by fall of coal at face of chamber.
Oct. 10	Frank Cominskey,	Lithuanian,	Miner,	30	S.			Eagle Hill,		Fatally injured by fall of coal at face of chamber.

	13	Alex Cromyock,	Hungarian,	Laborer,	49	M.	1	4	Maryd,	Schuylkill,		Fatally injured. Caught by cars. Outside.
	18	Mike Hobin,	American,	Patcher,	18	S.			Lucy R,			Fatally injured. Caught between car and prop on gangway.
Nov.	7	Stiney Loginskie,	Russian,	Miner,	56	M.	1		Buck Mountain,			Ruptured himself while lifting a prop. Died at Miners' Hospital November 16.
Dec.	13	John Hursic,	Slavonian,	Miner,	36	M.	1	3	Maryd,			Smothered by gas at face of chamber while trying to remove gas.
	30	Ambrose Kinderesee,	Lithuanian,	Miner,	35	M.	1		Silver Creek,			Suffocated by after-damp at face of chamber.
		Charles Steunelus,	Lithuanian,	Miner,	33	M.	1					

TABLE 5.—Non-fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 3	John Tedalla,	Polish,	Track helper,	29	M.	Buck Mountain,		Shoulder dislocated. Struck by prop on gangway.
4	James Discarlo,	Italian,	Laborer,	22	S.	Silver Creek,		Collar bone fractured. Struck by piece of rock that rolled down bank. Outside.
7	Charles Shields,	American,	Fire boss,	31	M.	Maryd,		Knee lacerated. Struck by hatchet while knocking blank off brattice.
8	Wilbur Garland,	American,	Miner,	33	M.	Wadesville,		Burned by explosion of gas in chamber.
16	Dan Habel,	American,	Miner,	30	S.	Tamaqua,		Face and hands burned by explosion of gas in chamber.
	Wilson Frantz,	American,	Miner,	32	S.			
19	Steve Schock,	Russian,	Driver,	21	S.	Wadesville,		Shoulder fractured by falling under cars on gangway.
Feb. 2	Joseph Yanaga,	Austrian,	Bankman,	44	M.	Tamaqua,		Shoulder blade fractured by car falling on him. Outside.
18	Frank Toner,	American,	Jig runner,	16	S.	Mt. Hope,		Hand crushed. Caught between rope and sheave wheel in breaker. Outside.
	George Kowanis,	Slavonian,	Miner,	32	M.	Wadesville,	Schuylkill,	Foot crushed by falling off platform that gave way.
19	William Dougherty,	American,	Driver,	27	S.	Silver Creek,		Arm fractured. Caught between car and collar on gangway.
28	Charles Curvey,	American,	Runner,	18	S.	Tamaqua,		Arm fractured. Caught by car on gangway.
	George Turis,	Lithuanian,	Miner,	39	M.	Eagle Hill,		Shoulder dislocated by falling while carrying timber up chute.
Mar. 4	Mike Tarola,	Slavonian,	Laborer,	29	M.	St. Clair,		Hand crushed. Run over by cars.
	John Praden,	Polish,	Laborer,	35	M.	Morea,		Hand crushed by fall of coal at face of gangway.
16	Mike Catshure,	Russian,	Laborer,	30	M.	Wadesville,		Leg fractured. Struck by lump of coal at face of gangway.
18	Nick Sricky,	Austrian,	Miner,	40	S.	Buck Mountain,		Face, hands and body burned by explosion of powder at face of chamber.
19	John Reilley,	American,	Chute boss,	28	S.	St. Clair,		Eye cut. Struck by piece of steel in breaker. Outside.
21	Andy Wagner,	Slavonian,	Miner,	50	M.	Wadesville,		Hand crushed by piece of rock rolling on it.

Mar.	23	Bernard Matthews,	American,	Motorman,	28	S.	Tamaqua,			Leg fractured. Knocked down by horse.
	28	George Belunis,	Russian,	Miner,	34	M.	Tamaqua,			Scalp lacerated and contusion of thigh. Struck by prop while placing a set of timber.
April	4	Thomas Wessener,	American,	Miner,	58	M.	Buck Mountain,			Leg fractured and face cut by fall of coal at face of chamber.
	8	Joseph Shewakis,	Lithuanian,	Miner,	22	S.	Eagle Hill,			Face and hands burned by explosion of gas at face of chamber.
		Andrew Trepock,	Austrian,	Machine runner,	37	M.	Tamaqua,			Three ribs fractured and body bruised by fall of roof at face of tunnel.
	17	George Gould,	American,	Miner,	48	M.	Tamaqua,			Scalp, shoulder and hand lacerated by fall of coal at face of chamber.
	27	August Rollis,	Lithuanian,	Miner,	53	M.	Maryd,			Face and hands burned by explosion of gas at face of chamber.
		Frank Seedar,	Lithuanian,	Miner,	36	M.	"			
	29	Andrew Bohan,	Slavonian,	Laborer,	38	M.	St. Clair,			Eye injured. Struck by piece of coal while trying to break it.
	29	Peter Matlock,	Tyrolean,	Miner,	32	M.	Eagle Hill,			Face, neck and hands burned by explosion of gas at face of chamber.
		John Leo,	Polish,	Miner,	38	M.	"			
May	4	John Shufsky,	Polish,	Slatepicker,	16	S.	Wadesville,			Shoulder bruised. Struck by rope in breaker. Outside.
		Paul Raublick,	Austrian,	Miner,	47	M.	Wadesville,			Finger crushed. Caught between cars and roof while dumping coal.
	12	Andrew Brusick,	Slavonian,	Loader,	45	M.	St. Clair,			Shoulder fractured. Struck by piece of coal while loading car from chute.
		George Soulka,	Slavonian,	Laborer,	46	M.	St. Clair,	Schuylkill,		Fingers crushed. Caught between locomotive and switch handle. Outside.
	13	Tom Stone,	American,	Fireman,	23	S.	St. Clair,			Foot cut off. Struck by dipper of steam shovel. Outside.
June	2	William Benkle,	Lithuanian,	Timberman,	28	M.	Wadesville,			Ribs fractured and body lacerated by falling at face of gangway.
	3	Tom McKenna,	American,	Roadman,	45	S.	Eagle Hill,			Finger fractured and head injured. Thrown into car when rope jerked. Outside.
		Joseph Dailey,	American,	Footman,	29	S.	Silver Creek,			Fore part of foot taken off by timber rolling on it at foot of shaft.
	8	Andrew Riddle,	American,	Car cleaner,	18	S.	Buck Mountain,			Leg fractured. Struck by rope. Outside.
	9	William Hartman,	American,	Laborer,	22	S.	Tamaqua,			Ankle fractured by fall of coal at face of gangway.
	10	Martin Hollish,	Lithuanian,	Miner,	51	M.	Wadesville,			Eye lacerated. Struck by piece of coal while erecting brattice.
	12	William Hostler,	American,	Carpenter,	21	S.	Tamaqua,			Clavicle fractured. Caught between cars. Outside.
July	12	Thomas Paisley,	American,	Carpenter,	18	S.	Morea,			Knee cap lacerated. Struck by hatchet while framing timber. Outside.
		Joseph Masonis,	Lithuanian,	Driver,	23	S.	Eagle Hill,			Head, face and thigh lacerated by falling under car on main haulage road.
	17	Harry Deitrick,	American,	Loader,	21	M.	Tamaqua,			Hand crushed. Caught between car and check poles.
	18	Alex Smolinskey,	Lithuanian,	Miner,	43	M.	Tamaqua,			Ankle fractured and leg lacerated by fall of coal at face of chamber.

TABLE 5.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
July 18	John Nolan,	American,	Miner,	39	M.	Buck Mountain,		Leg fractured and arm bruised by rush of coal in pillar chute.
19	Evan Stitton,	American,	Motorman,	22	S.	Tamaqua,		Arm lacerated and contusion of body by fall of rock on gangway.
31	Dan Grace,	American,	Runner,	28	S.	St. Clair,		Finger lacerated. Caught between sprag and ground while spragging cars.
Aug. 9	George Gould,	American,	Miner,	48	M.	Tamaqua,		Head and body injured by being washed down chute by rush of water.
24	John Krushusky,	Lithuanian,	Miner,	24	M.	Buck Mountain,		Head and shoulder lacerated by explosion of blast.
	Matt Hachenever,	Austrian,	Loader,	43	S.	Tamaqua,		Ankle lacerated and contusion of foot by rush of dirt in chute.
25	Dophine Yacenta,	Austrian,	Laborer,	28	S.	Buck Mountain,		Leg lacerated and contusion of ankle. Caught between cars and loose coal at face of gangway.
Sept. 13	Andrew Herman,	Slavonian,	Miner,	45	M.	St. Clair,		Head and leg lacerated by explosion of blast at face of chamber.
15	Anthony Novack,	Polish,	Miner,	33	M.	Silver Creek,	Schuylkill,	Face and neck severely burned by explosion of gas in chamber.
23	Ed McGonigle,	American,	Loader,	18	S.	Wadesville,		Collar bone fractured. Caught by cars. Outside.
24	Henry Zernalt,	American,	Dumpman,	48	M.	St. Clair,		Arm fractured. Struck by rail.
27	Peter Shopeck,	Slavonian,	Laborer,	55	M.	Eagle Hill,		Leg fractured. Caught between cars at bottom of shaft.
28	Stiney Marook,	Polish,	Miner,	32	M.	Middle Lehigh,		Back broken by fall of rock in pillar workings.
Oct. 7	Thomas Hess,	American,	Platform-man,	44	S.	Wadesville,		Toes fractured by platform plate falling on it. Outside.
	John Hartnet,	American,	Switchman,	19	S.	Eagle Hill,		Leg fractured above ankle. Caught between car and locomotive on gangway.
9	P. J. Portz,	American,	Runner,	57	M.	Tamaqua,		Hand crushed. Caught between cars. Outside.
10	Mike McKernan,	American,	Driver,	32	M.	Wadesville,		Back and side bruised by falling under loaded car of timber.

	16	Peter Cavage,	American,	Runner,	18	S.	Tamaqua,			Body contused. Caught by cars. Outside.
	19	Paul Sedock,	Slavonian,	Driver,	25	S.	Wadesville,			Fingers crushed. Caught between cars on gangway.
	24	Joseph Swiegard,	American,	Driver,	17	S.	Maryd,			Leg fractured. Caught between car and locomotive on gangway.
	31	Richard Bradley,	American,	Driver,	25	S.	Maryd,			Contusion of chest and pelvis and toe fractured. Caught between cars and timber on gangway.
Nov.	2	Jacob Robin,	Russian,	Miner,	28	S.	Tamaqua,			Arm fractured. Caught between chain and rock.
		Daniel Boyle,	Irish,	Miner,	37	M.	Morea,			Ankle fractured by fall of clod at face of chamber.
	13	William Renkenberg,	American,	Miner,	32	M.	Tamaqua,			Arm fractured by fall of coal at face of chamber.
	14	John Harris,	English,	Laborer,	22	S.	Morea,			Face, neck and hands burned by explosion of gas in chamber.
		John Millay,	Polish,	Miner,	22	S.				
	18	John Prutritas,	Lithuanian,	Miner,	33	M.	Silver Creek,			Hand bruised. Caught by cars.
	21	J. P. O'Neill,	American,	Loader,	27	M.	Silver Creek,	Schuylkill,		Foot crushed by car running over it. Outside.
Dec.	1	Mike McGovern,	American,	Loader,	22	S.	Silver Creek,			Hand crushed by car running over it.
	6	James McKernan,	American,	Runner,	33	S.	St. Clair,			Arm fractured. Caught between car and prop on gangway.
	8	James Scanlon,	American,	Hitcher,	36	M.	Mt. Hope,			Arm lacerated. Caught between rope and timber.
	15	Von Morgan,	American,	Engineer,	48	M.	Silver Creek,			Heel injured. Caught by machinery. Outside.
	19	George Davies,	American,	Laborer,	38	S.	Morea,			Toes cut off. Caught by machinery. Outside.
	20	Charles Grunda,	Slavonian,	Machine runner,	41	S.	Tamaqua,			Body injured. Caught between car and timber.
	23	William J. Eslieb,	American,	Platform-man,	18	S.	Tamaqua,			Hand badly bruised by striking it against chute while shoveling coal. Outside.

CONDITION OF MINES

PHILADELPHIA AND READING COAL AND IRON COMPANY

Silver Creek Colliery.—Ventilation, drainage and condition as to safety, good.

Eagle Hill Colliery.—Ventilation fair. Drainage and condition as to safety, good.

Wadesville Colliery.—Ventilation, roads, drainage and condition as to safety, good.

DODSON COAL COMPANY

Morea Colliery.—Ventilation, drainage and condition as to safety, good.

SAINT CLAIR COAL COMPANY

St. Clair Colliery.—Ventilation, roads, drainage and condition as to safety, good.

LEHIGH COAL AND NAVIGATION COMPANY

Tamaqua Colliery.—Ventilation and general condition as to safety, good. Drainage fair.

LEHIGH VALLEY COAL COMPANY

Buck Mountain Colliery.—Ventilation, drainage and condition as to safety, good.

MARYD COAL COMPANY

Maryd Colliery.—Ventilation and condition as to safety, good. Drainage fair.

MILL CREEK COAL COMPANY

Middle Lehigh and Wolf Creek Collieries.—Ventilation, drainage and condition as to safety, good.

MT. HOPE COAL COMPANY

Mt. Hope Colliery.—Ventilation, roads and drainage, fair. Condition as to safety, good.

EAST LEHIGH COAL COMPANY

East Lehigh Colliery.—Ventilation and condition as to safety, good. Drainage fair.

PORT CARBON COAL COMPANY

Lucy R Colliery.—Ventilation and condition as to safety, good. Drainage fair.

GORMAN AND CAMPION

Bell Colliery.—Ventilation and condition as to safety, good. Drainage fair.

IMPROVEMENTS

PHILADELPHIA AND READING COAL AND IRON COMPANY

Silver Creek Colliery.—The tunnel from West Top Split, No. 4 plane, to the Bottom Split, Windy Harbor basin, mentioned in last year's report, has been completed, a distance of 215 yards, and is now being driven to the Buck Mountain vein; estimated additional length, 80 yards.

The tunnel from Top Split to Holmes, east side section, No. 4 drift, mentioned in last year's report, has been completed, a distance of 188 yards.

The following tunnels have been driven during the year: West Top Split, No. 4 drift at breast No. 37, to the Holmes vein, length 52 yards; Skidmore to the Buck Mountain vein, No. 5 plane, length 81 yards; Diamond to the Little Diamond, No. 4 drift, length 70 yards; Skidmore to the Bottom Split, No. 5 plane, length 20 yards; Bottom Split to the Skidmore, No. 12 drift, length 17 yards.

An air tunnel has been driven from the West Top Split, No. 4 plane, to the Bottom Split, South dip, a distance of 54 yards, and is now being driven to the Buck Mountain vein; estimated additional length, 230 yards.

The diamond drill hole, from West Seven Foot gangway, off No. 11 water hole, mentioned in last year's report, has been completed, a distance of 18 yards, tapping the water in the Windy Harbor slope workings at an elevation of 765 feet.

The inside slope in the East Middle Split, No. 3 plane level, mentioned in last year's report, has been completed, a distance of 104 yards, and a gangway has been turned west.

The double track automatic landing, in rock, to the coal shaft, No. 4 plane, mentioned in last year's report, has been completed and is now in operation; total distance 273 yards.

An additional 10-ton electric haulage motor has been installed in No. 4 drift.

An electrically driven high speed Jeffrey exhaust fan 4 by 6 feet, is being installed on Top Split air hole to ventilate No. 4 plane, west side.

The grading for the electric dump car track east of the breaker, mentioned in last year's report, has been completed. A 20-ton electric refuse car has been installed and is now in operation.

Foundation and floor for outside stable have been completed.

Two spiral steamboat jigs have been installed in the breaker.

Eagle Hill Colliery.—The tunnel on the 6th lift from No. 32 chute in the West Skidmore gangway to the Seven Foot gangway has been completed, a distance of 24 yards.

A tunnel is being driven northward from the West Skidmore gangway, 5th lift, to the Seven Foot vein, a total estimated distance of 45 yards.

A rock hole has been driven from No. 27 chute, West Seven Foot gangway, 6th lift, to the Skidmore vein, a distance of 11 yards.

A haulage tunnel is being driven south from the East Skidmore gangway, 6th lift, No. 68 chute, to the Top Split vein, length 101 yards. The Bottom Split and Middle Split veins have been cut.

An air tunnel is being driven south from the East Skidmore monkey heading, 6th lift, at No. 67 chute to the Top Split vein, to accompany the above haulage tunnel.

Installed a 20-foot ventilating exhaust fan at the air shaft.

A system of electric haulage is being installed on the 6th lift.

Wadesville Colliery.—A haulage tunnel has been driven from the East Holmes gangway, No. 2 lift, Holmes slope, a distance of 135 yards to the Top Split vein.

A water level tunnel is being driven from the surface to the Skidmore vein, 300 feet east of the Vulcan slope.

Holmes slope has been sunk for four lifts and is being continued to the 5th lift.

A haulage tunnel has been driven south from the West Seven Foot gangway, No. 18 chute, Beechwood drift, to the Bottom Split vein, and a gangway turned east; length of tunnel 33 yards. A haulage tunnel has also been driven north at this point to the little Buck and Buck Mountain veins, length 50 yards. Gangways have been turned east and west on both veins.

Another 8-inch bore hole has been sunk to the Vulcan slope to aid in the drainage of these workings.

A haulage tunnel south from the East Skidmore gangway, No. 1 lift, East Skidmore plane, to the Bottom Split vein, has been completed, length 95 yards.

The bottom rock is being lifted in breast No. 73, East Top Split, shaft level, which will be made into a self-acting plane.

A second outlet from the Orchard landing level has been driven to the coal shaft.

The brick dam in the Holmes Seven Foot tunnel, Holmes slope, which was reported as being in progress, has been completed. This dam relieves the Holmes slope workings of all the water from the Sebastopol workings.

A plane to handle the breaker refuse is in progress. The engine house, hopper and other small details, have been completed. This plane will replace the scraper line now in use for this purpose.

A 35 K. W. turbo generator set and a charging station for miners' electric lamps have been installed.

The buildings, offices, etc., outside at the colliery are being lighted by electricity, and preparations are being made to install electric lighting inside.

DODSON COAL COMPANY

Morea Colliery.—450 feet of rock chutes have been driven from Seven Foot to Skidmore and Skidmore to Mammoth vein.

Installed automatic car dump at foot of No. 2 slope and car pusher in shaft, first level.

Purchased one 10-ton Jeffrey and one 6-ton General Electric haulage motor; one 9 by 12 Aldrich horizontal triplex electric pump for drainage of West Buck Mountain basin; also two lung motors and 5 Draeger helmets.

Outside: Old transient rock dump replaced by permanent pocket auxiliary dump.

Car handling apparatus installed to move railroad cars beneath breaker.

Built frame waiting room, 8 by 31 feet for the accommodation of inside employes, at head of No. 1 slope.

SAINT CLAIR COAL COMPANY

St. Clair Colliery.—Traveling-way built from 1st West No. 1 slope to the surface.

Old water level Buck Mountain drift lined with concrete arch and provided with a concrete entrance.

Drove rock plane from Seven Foot to Skidmore on second east level for 300 feet and continued east in the Skidmore vein for 1,400 feet.

LEHIGH COAL AND NAVIGATION COMPANY

Tamaqua Colliery.—Drove 175 yards West Skidmore gangway, third level, and 150 yards of drift gangway. 125 yards of shaft were sunk.

Erected landings for sceond and third levels.

Stripping Top and Bottom Split Mammoth, North basin.

Outside: Installed electric water hoist and electric tender shaft hoist. Installed 650 Edison electric mine lamps.

Built narrow gauge railroad from shaft to High mines drift, with sub-station and equipment.

Erected office building, steel head frame, and powder house.

LEHIGH VALLEY COAL COMPANY

Tamaqua Colliery.—A tunnel, 381 feet long, is being driven from the East Mammoth Bottom Split, North dip, to the East Bottom Split, South dip, second level, No. 1 slope.

A tunnel is being driven from the 5th level, West Skidmore, South dip, to the Mammoth Bottom Split vein, Vulcan slope.

A tunnel and rock plane were driven from the 4th level West Mammoth Top Split, North dip, to the Holmes vein, Vulcan slope.

A 9 by 2 foot Multivane direct-connected steam driven exhaust fan and a 10 by 12 engine, housed in a tile building, were installed for ventilating the Vulcan 5th level workings. A 3-inch steam line from Park No. 4 boiler house was constructed to operate the fans and engine.

MARYD COAL COMPANY

Maryd Colliery.—The following tunnels were driven: First level, No. 1 basin from East Holmes to Primrose, length 89 feet; second level, south from No. 3 East Holmes to Orchard, length 160 feet; second level, No. 1 basin north from East Middle Split to Bottom Split, length 937 feet.

Completed traveling-way or mule road from second level to first level.

Completed 8-inch steam line from surface to second level pump.

Outside: Installed one 800-foot Sullivan air compressor.

Completed 10-inch steam line from boiler house to columnway.

MILL CREEK COAL COMPANY

Middle Lehigh Colliery.—Completed stripping of Top Split vein. First aid room and fireproof house for explosive caps were erected outside.

Wolf Creek Colliery.—Installed a Goyne pump 24 by 10 by 36 inches at first level.

Erected 16-foot ventilating fan on top of the mountain, south side.

Erected fireproof powder house and small fireproof house for caps.

PORT CARBON COAL COMPANY

Lucy R Colliery.—Drove tunnel in slope 287 feet south to Primrose. Completed pump house, 12 by 8 by 10 feet.

Outside: Installed 2 Cameron electric pumps and electric hoist.

GORMAN AND CAMPION

Bell Colliery.—Drove tunnel south to Middle Split vein, length 300 feet, and one north from Middle Split to Top Split, length 60 feet.

Installed two Anthracite spiral separators.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in Pottsville, June 6 and 7. The Board of Examiners was composed of Keran Donahue, Mine Inspector; Luke Stiles, Superintendent, Port Carbon; William Brennan, Miner, Port Carbon; James J. Curran, Miner, Silver Creek.

The following persons passed a satisfactory examination and were granted certificates:

MINE FOREMEN

Daniel Brennan, Morea; Thomas Davis, Tamaqua; Thomas Filer, Coaldale; William Mangle, Shamokin; Charles Shields, Maryd.

ASSISTANT MINE FOREMEN

Edward Davis, Lansford; Jacob Jones, Albert Pasco, Coaldale; Thomas Letcher, Morea; Frank Sarric, New Boston, Richard Waters, George Jenkins, Summit Hill; Michael Burns, Tamaqua.

NINETEENTH DISTRICT

SCHUYLKILL COUNTY

Pottsville, Pa., February 21, 1917.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor of transmitting herewith my annual report as Inspector of Mines of the Nineteenth Anthracite District for the year ending December 31, 1916.

Respectfully submitted,

MICHAEL J. BRENNAN,
Inspector.

SUMMARY OF STATISTICS

Number of collieries,	15
Number of mines,	36
Number of mines in operation,	36
Number of gaseous mines in operation,	27
Number of non-gaseous mines in operation,	9
Number of tons of coal shipped to market,	2,257,262
Number of tons used at mines for steam and heat,	426,892
Number of tons sold to local trade and used by employes,	26,394
Number of tons produced,	2,710,548
Number of tons produced by compressed air machines,	.....
Number of tons produced by electrical machines,	.....
Number of persons employed inside of mines,	3,448
Number of persons employed outside,	1,676
Number of persons employed inside between 16 and 21 years,	220
Number of persons employed outside between 14 and 21 years,	448
Number of fatal accidents inside,	14
Number of fatal accidents outside,	2
Number of non-fatal accidents inside,	87
Number of non-fatal accidents outside,	29
Number of tons of coal produced per fatal accident inside,	193,611
Number of tons produced per fatal accident inside and outside,	169,409
Number of persons employed per fatal accident inside,	246
Number of persons employed per fatal accident outside,	838
Number of persons employed per fatal accident inside and outside,	320
Number of persons employed per non-fatal accident inside,	40
Number of persons employed per non-fatal accident outside,	58
Number of persons employed per non-fatal accident inside and outside,	44
Number of wives made widows,	6
Number of children made orphans,	17
Number of steam locomotives inside,	1
Number of steam locomotives outside,	23
Number of compressed air locomotives inside,	.....
Number of compressed air locomotives outside,	.....
Number of electric motors inside,	20
Number of electric motors outside,	4
Number of gasoline locomotives inside,	.....
Number of gasoline locomotives outside,	.....
Number of cylindrical boilers,	.....
Number of tubular boilers,	126
Number of steam engines of all classes,	311
Number of internal combustion engines (gas),	.....
Number of electric dynamos,	20

Number of pumps of all classes,	129
Number of pumps delivering water to surface,	41
Number of air compressors,	11
Number of fans in use,	37
Number of new mines opened,	.....
Number of old mines abandoned,	2

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Philadelphia and Reading Coal and Iron Company, ...	1,233,233
Lytle Coal Company, ...	347,665
Pine Hill Coal Company, ...	298,021
Buck Run Coal Company, ...	272,730
Oak Hill Coal Company, ...	232,638
Darkwater Coal Company, ...	118,734
Ellsworth Coal Company, ...	82,205
White and Company, ...	67,459
Emperor Coal Company, ...	20,010
Wolf Creek Coal Company, ...	18,204
Butcher Creek Coal Company, ...	11,521
Black Heath Coal Company, ...	8,128
Total, ...	2,710,548

Production by Counties

Schuylkill, ...	2,710,548

TABLE B.—Fatal and non-fatal accidents inside and outside of mines, number of tons of coal produced per accident, number of persons employed, number employed per accident

Names of Operators	Fatal Accidents				Non-fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Total number of employes	Number of employes inside per fatal accident	Number of employes outside per fatal accident	Number of employes inside per non-fatal accident	Number of employes outside per non-fatal accident
	Inside	Outside	Total		Inside	Outside	Total									
Philadelphia and Reading Coal and Iron Co.,	2	1	3		38	18	56	616,617	32,454	1,344	689	2,033	672	680	35	38
Lytle Coal Co.,	4		4		11		11	86,936	31,606	530	222	752	133		48	
Pine Hill Coal Co.,		1	1		17	1	18		17,531	522	233	755		233	31	233
Buck Run Coal Co.,	2		2		3		3	136,365	99,910	397	134	531	199		132	
Oak Hill Coal Co.,					14	6	20	116,319	16,617	273	149	422	137		91	25
Darkwater Coal Co.,	4		4		1	1	2	29,684	118,734	147	89	236	37		147	89
White and Co.,					3	1	4		22,486	117	49	166			39	49
Wolf Creek Coal Co.,						1	1				20	20				20
Black Heath Coal Co.,						1	1			11	9	20				9
Miscellaneous Companies,										107	82	189				
Totals and averages,	14	2	16		87	29	116	193,611	31,156	3,448	1,676	5,124	246	88	40	58

TABLE C.— Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,			1								1		2	14.29
Mine cars,						1		1					2	14.29
Rush of coal,								1	1				2	14.29
Falling into slopes, etc.,								1					1	7.14
Cause unknown,					1								1	7.14
Mules,								1					1	7.14
Struck by piece of coal,	1												1	7.14
Electricity,						1							1	7.14
Scalded while fighting mine fire,										3			3	21.43
Totals,	1		1		1	2		4	1	3	1		14	100.00
Outside														
Cars,				1									1	50.00
Rush of culm,										1			1	50.00
Totals,				1						1			2	100.00
Grand totals,	1		1	1	1	2		4	1	4	1		16	

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,	3	4	6	2	1	3	3	1		1	2		26	29.88
Falls of slate,	1		2	2	2		3	2		1			13	14.94
Falls of roof,								2			1		3	3.45
Mine cars,	3		2		1	1		1		1	2		11	12.64
Explosions of gas,	1		2	1									4	4.60
Blasts, premature and otherwise,			2								1		3	3.45
Falling,		1	1										2	2.30
Struck by rock, coal and slate,		2		1		1		2			2	1	9	10.34
Stepped on nail,		2							1				3	3.45
Struck by rail,					1				1				2	2.30
Crushed at batteries,						1							1	1.15
Mules,	1												1	1.15
Machinery,			3										3	3.45
Burned by safety lamp,					1								1	1.15
Struck by timber,								1	1				2	2.30
Scalded at mine fire,										3			3	3.45
Totals,	9	9	18	6	6	6	6	9	3	6	8	1	87	100.00
Outside														
Cars,		3	1		1		3	4			1	3	16	55.17
Machinery,	1			1		2		1		1			6	20.69
Struck by rock and coal,	1		1						1				3	10.34
Scraping ashes,		1											1	3.45
Falling,		1	1										2	6.90
Struck by sprag,								1					1	3.45
Totals,	2	5	3	1	1	2	3	6	1	1	1	3	29	100.00
Grand totals,	11	14	21	7	7	8	9	15	4	7	9	4	116	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Assistant mine foremen,										1			1
Miners,	1		1		1	1				1	1		6
Miners' laborers,						1			1	1			3
Drivers and runners,								1					1
Motormen and assistants,								1					1
Trackmen and bratticemen,								1					1
Starters,								1					1
Totals,	1		1		1	2		4	1	3	1		14
Outside													
Laborers,				1						1			2
Totals,				1						1			2
Grand totals,	1		1	1	1	2		4	1	4	1		16

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Fire bosses,										1			1
Miners,	4	5	9	5	2	4	5	5	1	4	5		49
Miners' laborers,		1	4		2	1		2					10
Drivers and runners,	2		3		1		1	1			1		9
Bottommen,	1										1		2
Laborers,	2	2	1	1		1		1	2		1	1	12
Repairmen,		1											1
Fanman,			1										1
Slopemen,					1								1
Barnbosses,										1			1
Totals,	9	9	18	6	6	6	6	9	3	6	8	1	87
Outside													
Blacksmiths and carpenters,		1											1
Engineers and firemen,		1									1		2
Machinists and helpers,			1				1						2
Trackmen,									1				1
Slatepickers (boys),			1										1
Jig runners,	1					1							2
Laborers,	1	3				1	1	5				2	13
Switchmen,			1		1								2
Feeders,				1									1
Spraggers,							1	1					2
Oilers,										1			1
Drivers,												1	1
Totals,	2	5	3	1	1	2	3	6	1	1	1	3	29
Grand totals,	11	14	21	7	7	8	9	15	4	7	9	4	116

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,				1	1			3		2			7
Scotch,								1					1
Polish,										2			2
Slavonian,						1			1				2
Lithuanian,	1												1
Austrian,											1		1
Russian,			1			1							2
Totals,	1		1	1	1	2		4	1	4	1		16

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	5	8	5		2	3	4	7		4	3	3	44
Welsh,	1					1							2
Polish,	1	3	4	2	1	1				1			13
Italian,			3	2			1	1					7
Slavonian,		1	4	1	1	1	1	4	2	1		1	17
Lithuanian,	1		1		2	1	3	1	2		4		15
Austrian,			1								1		2
Russian,	2	2	2	1	1	1		1		1			11
Greek,	1												1
French,				1									1
Tyrolean,			1					1			1		3
Totals,	11	14	21	7	7	8	9	15	4	7	9	4	116

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and Types of Safety Lamps Used	
				Shaft	Slope (Coal or Rock)		Drift		Flame	Electric
				Depth	Length	Average pitch—degrees				
Philadelphia and Reading Coal and Iron Co.										
Otto Colliery:							Drift,	Gaseous,		
White Ash,	Schuylkill,				1,207			Gaseous,	439	24
No. 2 Shaft,					1,750	35		Gaseous,		
No. 1 Holmes,					921	29		Gaseous,		
No. 3 Holmes,										
Pine Knot Colliery:										
No. 1 Shaft,	Schuylkill,			1,250				Gaseous,		
No. 2 Shaft,				799				Gaseous and Non-gas.,	312	
Thomaston Colliery:										
Thomaston Lelar,	Schuylkill,				930	42		Gaseous,	184	
Thomaston Crosby,					880	45		Gaseous,		
Phoenix Park Colliery:										
Diamond,					1,903	26		Gaseous,		
No. 6 Tracy,	Schuylkill,				4,616	6		Gaseous,	463	95
Tracy Air Shaft,				349				Gaseous,		
Peach Mountain,								Gaseous,		
Glendower Colliery:										
Glendower No. 1,					1,652	60		Gaseous,		
Glendower No. 1,	Schuylkill,						Drift,	Non-gas.,	102	
West Glendower,					2,450	24		Non-gas.,		
Glendower Top Split,					1,900	16		Non-gas.,		
John Veith Colliery:										
No. 1 Shaft,	Schuylkill,			1,236				Gaseous,	26	
No. 2 Shaft,*				955				Gaseous,		

*Idle.

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening: Shaft — Depth	Kind of Opening: Slope (Coal or Rock) — Length	Kind of Opening: Slope (Coal or Rock) — Average pitch—degrees	Kind of Opening: Drift	Gaseous or non-gaseous	Number and Types of Safety Lamps Used: Flame	Number and Types of Safety Lamps Used: Electric
Lytle Coal Co.										
Lytic Colliery:										
		Tracy,	68							
		Big Diamond,	78							
		Primrose,	97							
		Holmes,	36							
		Four Foot,	36							
Shaft,	Schuylkill,	Top Split of Mammoth	74	1,254				Gaseous,	875	37
		Middle Split of Mammoth	36							
		Bottom Split of Mammoth	69							
		Skidmore,	72							
		Buck Mountain,	117							
Pine Hill Coal Co.										
Pine Hill Colliery:										
		Ridge,	72	600			Drift,	Gaseous,	176	8
		Buck Mountain,	97					Gaseous,		
		Seven Foot,	32					Gaseous,		
Shaft, Drift, Slope,	Schuylkill,	Skidmore,	70					Gaseous,		
		Black Heath Mammoth	92		1,100	35		Gaseous,		
		Red Ash Mammoth,	120					Gaseous,		
		White Ash Mammoth	78					Gaseous,		

Buck Run Coal Co.										
Buck Run Colliery:										
Slope,	Schuylkill,	Top Split of Mammoth	120							
		Bottom Split of Mammoth	96		1,100	48		Gaseous,	375	
		Skidmore,	48							
		Seven Foot,	30							
		Buck Mountain,	96							
Oak Hill Coal Co.										
Oak Hill Colliery:										
		Top Split of Mammoth	96	850				Gaseous,		
Shaft,		Bottom Split of Mammoth	24		1,000	27		Gaseous,	325	
Slope,	Schuylkill,	Four Foot Mammoth	108				Drift,	Non-gas.,		
Drift,		Skidmore,	48				Drift,	Non-gas.,		
Drift,		Buck Mountain	96							
Darkwater Coal Co.										
Newcastle Colliery:										
		Mammoth,	144							
Slope,	Schuylkill,	Skidmore,	36		900	60		Gaseous,	65	15
		Buck Mountain,	36							
		Four Foot,	36							
		Seven Foot,	17							
Ellsworth Coal Co.										
Ellsworth Colliery:										
		Mammoth,	480		525	30		Non-gas.,		
Slope,	Schuylkill,	Skidmore,	36							
		Crosby,	72							
White and Co.										
Howard Colliery:										
Howard Slope,					350	18		Gaseous,		
Slope,	Schuylkill,	Primrose,	108		375	20		Gaseous,	30	
Slope,					500	18		Gaseous,		
Butcher Creek Coal Co.										
Laurel Run Colliery:										
Slope,	Schuylkill,	Mammoth,	240		300	22	Drift,	Non-gas.,		
Drift,										
Black Heath Coal Co.										
Black Heath Colliery:										
Slope,	Schuylkill,	Mammoth Black Heath	96		100	12		Non-gas.,		

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet.	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside	
Philadelphia and Reading Coal and Iron Co.													
Otto Colliery:													
White Ash,			Guibal,	15	82	1.3	Steam,	67,270	70,210	25,300	7		
No. 2 Shaft,	Schuylkill,		Guibal,	21	89	1.5	Steam,	71,890	80,620	17,940	5		
No. 1 Holmes,			Guibal,	18	55	.6	Steam,	23,612	26,056	6,873	2	286	
No. 3 Holmes,			Guibal,	21	84	2.5	Steam,	79,819	88,815	19,942	9		
Pine Knot Colliery:			Guibal,	12	40	1.0	Steam,	30,370	35,030	8,395	2		
No. 1 Shaft,	Schuylkill,		Guibal,	21	70	2.	Steam,	70,000	112,000	55,000	28	297	
No. 2 Shaft,													
Thomaston Colliery:													
Thomaston Lelar,	Schuylkill,		Guibal,	18	95	1.3	Steam,	69,741	78,140	61,542	9	122	
Thomaston Crosby,			Guibal,	12	30	.4	Steam,	23,675	25,500	21,800	2		
Phoenix Park Colliery:													
Diamond,			Guibal,	15	99	1.4	Steam,	29,350	30,120	22,330	4		
No. 6 Tracy,	Schuylkill,		Guibal,	15	115	1.	Steam,	49,150	51,100	41,550	9	418	
Tracy Air Shaft,			Guibal,	21	90	2.	Steam,	110,135	119,315	79,730	19		
Peach Mountain,													
Glendower Colliery:													
Glendower No. 1,			Guibal,	21	90	2.	Steam,	90,360	90,080	47,460	9		
Glendower No. 1,	Schuylkill,		Guibal,	15	46	.4	Electricity,	43,340	43,260	20,020	8	205	
West Glendower,			Guibal,	18	76	1.6	Steam,	75,640	75,220	46,500	19		
Glendower Top Split,			Guibal,	5	150	.2	Steam,	7,420	7,400	2,220			
John Veith Colliery:													
No. 1 Shaft,*	Schuylkill,		Guibal,	15									
No. 2 Shaft,			Guibal,	15	80	2.	Steam,	55,000	72,000		12	18	

*Idle.

Lytle Coal Co.													
Lytle Colliery:													
		Tracy,											
		Big Diamond,											
		Primrose,											
		Holmes,											
		Four Foot,	Guibal,	18	94	2.1	Steam,	60,000	69,300		9	162	
Shaft,	Schuylkill,	Top Split of Mammoth	Guibal,	20	95	2.	Steam,	113,030	127,500		9	172	
			Guibal,	12	90	2.3	Electricity,	101,120	120,500		12	196	
		Middle Slpit of Mammoth											
		Bottom Split of Mammoth											
		Skidmore,											
		Buck Mountain,											
Pine Hill Coal Co.													
Pine Hill Colliery:													
		Ridge,	Guibal,	20	76	1.	Steam,	53,750	78,000	51,000	6	134	
		Buck Mountain,	Guibal,	16	85	.8	Steam,	25,000	55,000	25,000	2	32	
		Seven Foot,											
Shaft,		Skidmore,											
Drift,	Schuylkill,	Black Heath Mammoth	Guibal,	18	119	1.1	Electricity,	51,900	122,000	50,000	5	79	
Slope,			Guibal,	18	95	1.	Electricity,	68,000	72,000	59,500	8	130	
		Red Ash Mammoth,											
		White Ash Mammoth											
Buck Run Coal Co.													
Buck Run Colliery:													
		Top Split of Mammoth	Guibal,	12	120	1.5	Steam,	45,000	48,000	18,000			
Slope,	Schuylkill,	Bottom Split of Mammoth	Sirocco,	6	220	.5	Electricity,	25,000	27,000	12,000	10	397	
		Skidmore,	Jeffrey,	6	220	.75	Electricity,	55,000	65,000	35,000			
		Seven Foot,	Sirocco,	6	220	.5	Electricity,	25,000	27,000	10,000			
		Buck Mountain,											
Oak Hill Coal Co.													
Oak Hill Colliery:													
		Top Split of Mammoth	Guibal,	18	100	1.5	Steam,						
Shaft,		Bottom Split of Mammoth	Guibal,	24	86	2.	Steam,						
Slope,	Schuylkill,	Four Foot Mammoth	Stine,	12.8	200		Steam,	245,784	225,675	17,995	12	273	
Drift,		Skidmore,	Guibal,	10	114		Steam,						
Drift,		Buck Mountain											

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet.	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Darkwater Coal Co. Newcastle Colliery: Slope,	Schuylkill,	Mammoth, Skidmore, Buck Mountain, Four Foot, Seven Foot,	Vulcan,	10	70	2.	Steam,	35,000	38,000	38,000	5	147
Ellsworth Coal Co. Ellsworth Colliery: Slope,	Schuylkill,	Mammoth, Skidmore, Crosby,	Vulcan, Buffalo,	18 6	50 125	1.5 1.	Steam, Steam,	38,915 8,220	56,000 22,000	31,400 7,520	5 1	85
White and Co. Howard Colliery: Howard Slope, Slope, Slope,	Schuylkill,	Primrose,	Guibal, Guibal,	12 10	65 65	.4 .6	Steam, Steam,	24,000 8,000	26,000 8,500	20,000 3,000 2,000	1 2 3	51 22 44
Butcher Creek Coal Co. Laurel Run Colliery: Slope, Drift,	Schuylkill,	Mammoth,										22
Black Heath Coal Co. Black Heath Colliery: Slope,	Schuylkill,	Mammoth Black Heath										11

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	General Superintendent	Postoffice	Superintendent	Postoffice	Railroad to Mine
Philadelphia and Reading Coal and Iron Co. Otto, Pine Knot, Thomaston, Phoenix Park, Glendower, John Veith, Anchor Washery,	Schuylkill,	E. E. Kaercher,	Pottsville,	E. J. Weimer, Division Superintendent Charles Gallagher, Inside District Superintendent John Paul, Outside District Superintendent	Pottsville, Pottsville, Pottsville,	Philadelphia and Reading
Lytle Coal Co. Lytle,	Schuylkill,	Robert A. Quin,	Wilkes-Barre,	E. A. Van Horn,	Minersville,	Pennsylvania
Pine Hill Coal Co. Pine Hill, Brock Washery,	Schuylkill,	Charles H. Strange,	Minersville,	George Moore,	Minersville,	Philadelphia and Reading
Buck Run Coal Co. Buck Run,	Schuylkill,	James B. Neale,	Minersville,			Philadelphia and Reading
Oak Hill Coal Co. Oak Hill,	Schuylkill,	Thomas M. Righter,	Duncott,	John T. Cartwright,	Duncott,	Philadelphia and Reading
Darkwater Coal Co. Newcastle,	Schuylkill,	James B. Neale,	Minersville,			Pennsylvania
Ellsworth Coal Co. Ellsworth,	Schuylkill,	George M. Keiser,	Minersville,	Gething Jenkins,	Minersville,	Philadelphia and Reading
White and Co. Howard,	Schuylkill,	Robert White,	Pottsville,			Philadelphia and Reading
Emperor Coal Co. Emperor Washery,	Schuylkill,	George M. Keiser,	Pottsville,			Philadelphia and Reading

TABLE 1.—Continued

Names of Operators and Collieries	County	General Superintendent	Postoffice	Superintendent	Postoffice	Railroad to Mine
Wolf Creek Coal Co. Wolf Creek Washery,	Schuylkill,	C. H. Strange,	Minersville,	George Moore,	Minersville,	Philadelphia and Reading
Butcher Creek Coal Co. Laurel Run,	Schuylkill,	L. J. Whims,	St. Clair,			Philadelphia and Reading
Black Heath Coal Co. Black Heath,	Schuylkill,	James Scott,	Minersville,			Hauled by team

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives		
										Pounds of black powder used	Pounds of dynamite used	Pounds of permissible explosives used
Philadelphia and Reading Coal and Iron Co.												
Otto,	Schuylkill,	264,819	62,795	1,793	329,407	282	463	1	18		89,370	36,286
Pine Knot,		215,613	46,482	4,341	266,436	280	499		21		158,195	40,724
Thomaston, *			17,365		17,365		145					
Phoenix Park,		239,418	34,037	2,236	275,691	285	594	1	9		54,189	95,524
Glendower,		172,797	22,492		195,289	280	261	1	6	675	88,669	6,309
John Veith,							27				1,225	
		892,647	183,171	8,370	1,084,188		1,986	3	54	675	391,648	178,843
Anchor Washery,		141,948	7,097		149,045	303	47		2			
Totals,		1,034,595	190,268	8,370	1,233,233		2,033	3	56	675	391,648	178,843
Lytle Coal Co.												
Lytle,	Schuylkill,	259,489	78,900	9,276	347,665	266	752	4	11		40,738	107,598
Pine Hill Coal Co.												
Pine Hill,	Schuylkill,	247,492	44,198	1,746	293,346	285	733	1	18	27,500	41,325	78,375
Brock Washery,		4,675			4,675	102	22					
Totals,		252,167	44,198	1,746	298,021	285	755	1	18	27,500	41,325	78,375
Buck Run Coal Co.												
Buck Run,	Schuylkill,	242,836	29,000	894	272,730	279	531	2	3		180,300	

*Coal prepared at Pine Knot breaker.

TABLE 2—Part I—Continued

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives: Pounds of black powder used	Explosives: Pounds of dynamite used	Explosives: Pounds of permissible explosives used
Oak Hill Co.												
Oak Hill,	Schuylkill,	188,821	42,000	1,817	232,638	258	422	2	20		91,075	5,875
Darkwater Coal Co.												
Newcastle,	Schuylkill,	91,521	26,000	813	118,734	260	236	4	2	300	34,008	
Ellsworth Coal Co.												
Ellsworth,	Schuylkill,	80,035	2,000	200	82,235	291	123				15,000	
White and Co.												
Howard,	Schuylkill,	58,692	8,550	267	67,459	272	166		4		7,500	4,850
Emperor Coal Co.												
Emperor Washery,*	Schuylkill,	19,110	900		20,010	121	30					
Wolf Creek Coal Co.												
Wolf Creek Washery,	Schuylkill,	16,054	2,150		18,204	152	20		1			
Butcher Creek Coal Co.												
Laurel Run,	Schuylkill,	9,031	2,400	90	11,521	209	36				2,000	
Black Heath Coal Co.												
Black Heath,	Schuylkill,	4,631	576	2,921	8,128	238	20		1		375	
Grand totals,		2,257,262	426,802	26,594	2,710,548		5,124	16	116	28,475	803,969	375,541

*Abandoned.

TABLE 2.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Names of Operators	County	Power Plant										Pumps			Haulage					Air Compressors	
		Boilers				Engines									Locomotives						
		Cylindrical		Tubular		Steam Engines (All Classes)		Internal Combustion Engines (Gas)		Electric Dynamos (All Classes)				Pumps Delivering Water to the Surface							
		Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total kilowatts	Number	Total kilowatts	Number	Total capacity in gallons per minute	Number	Approximate number gallons per minute	Number of horses and mules	Gasoline	Steam	Air	Electric	Number	Total capacity cubic feet per minute
Philadelphia and Reading Coal and Iron Co.,	Schuylkill,			56	10,590	177	21,984			5	1,170	84	54,519	19	6,977	234		14		6	3	4,880
Lytle Coal Co.,				27	3,900	21	7,287			3	500	2	5,000	*	1,540			1		4	3	1,500
Pine Hill Coal Co.,				4	3,000	24	2,125			2	395	11	7,317	4	6,000	37				6		
Buck Run Coal Co.,				9	1,800	24	1,020			2	310	5	9,500	5	800	14		3		6	3	175
Oak Hill Coal Co.,				5	2,500	20	1,950					9	7,850	3	3,000	50		5			1	500
Darkwater Coal Co.,				6	1,200	16	805			1	350	3	4,000	3	1,200	12				2	1	80
Ellsworth Coal Co.,				6	600	8	240					2	2,500	2	1,350	5						
White and Co.,				5	675	11	385			7	3,500	7	3,500	3	1,100	11		1				
Emperor Coal Co.,				2	300	1	30					2	1,200									
Wolf Creek Coal Co.,				2	200	3	105					2	400									
Butcher Creek Coal Co.,				3	360	4	170					2	250	2	200	4						
Black Heath Coal Co.,				1	120	2	80									2						
Totals,				126	25,145	311	36,181			20	6,225	129	96,027	41	22,167	369		24		24	11	7,135

*Water Hoist.

TABLE 3.—Part 1.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside																	Outside										Grand total inside and outside
		Mine foremen	Assistant mine foremen	Fire bosses	Miners	Miner's laborers	Machine miners	Machine runners and scrapers	Drivers and runners	Motormen and assistants	Doorboys and helpers	Trackmen and bratticemen	Timbermen and rockmen	Pumpmen and pipemen	Electricians and helpers	All other employes	Total inside	Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Machinists and helpers	Trackmen and helpers	Slate pickers (boys)	Slate pickers (men)	Office employes	All other employes	Total outside	
Philadelphia and Reading Coal and Iron Co.,	Schuylkill,	7	52	----	379	110	----	----	87	7	6	61	29	16	----	591	1,344	----	6	37	134	2	8	41	23	13	425	689	2,033
Lytle Coal Co.,		1	3	14	244	58	----	----	29	3	1	19	74	6	2	85	539	1	1	16	41	----	----	52	19	8	84	222	752
Pine Hill Coal Co.,		1	2	8	198	139	----	----	39	11	10	29	41	3	3	47	522	2	2	16	23	13	2	40	17	8	110	233	755
Buck Run Coal Co.,		1	1	6	149	119	----	----	10	12	2	15	23	4	2	53	397	----	2	11	17	4	7	16	1	8	68	134	531
Oak Hill Coal Co.,		1	1	9	175	25	----	----	26	----	2	10	13	1	----	10	273	1	1	17	23	4	2	49	20	5	36	149	422
Darkwater Coal Co.,		1	----	2	37	41	----	----	13	4	----	11	15	4	2	17	147	----	1	6	12	3	7	11	1	2	46	89	236
Ellsworth Coal Co.,		1	1	1	38	15	----	----	3	----	----	----	5	2	----	19	85	1	2	3	5	1	2	4	2	2	16	38	123
White and Co.,		2	----	2	46	39	----	----	8	----	----	4	6	1	----	9	117	1	1	3	13	2	----	8	1	2	18	49	166
Emperor Coal Co.,		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	1	2	4	2	----	3	----	1	16	30	30
Wolf Creek Coal Co.,		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	1	1	4	1	----	4	----	1	7	20	20
Butcher Creek Coal Co.,		1	1	----	9	9	----	----	1	----	----	----	----	1	----	----	22	1	1	1	4	----	----	2	----	----	5	14	36
Black Heath Coal Co.,		1	----	----	5	4	----	----	1	----	----	----	----	----	----	----	11	----	----	----	1	----	----	----	2	----	6	9	20
Totals,		17	61	42	1,280	559	----	----	217	37	21	131	206	38	9	830	3,448	9	19	113	281	32	28	221	86	50	837	1,676	5,124

TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Total
Philadelphia and Reading Coal and Iron Co.,	Schuylkill,	24	24	26	19	19	25	24	26	24	25	24	23	283
Lytle Coal Co.,		24	23	27	16	22	24	25	24	23	19	16	23	266
Pine Hill Coal Co.,		25	24	27	20	15	25	24	26	25	26	24	24	285
Buck Run Coal Co.,		22	25	25	15	22	24	21	26	25	24	25	26	279
Oak Hill Coal Co.,		25	24	23	16	16	19	22	24	21	24	23	21	258
Darkwater Coal Co.,		23	23	23	17	29	23	21	18	22	24	23	23	260
Ellsworth Coal Co.,		24	25	26	22	25	25	24	25	26	25	24	22	291
White and Co.,		24	23	26	24	22	24	26	23	24	20	24	22	272
Butcher Creek Coal Co.,		18	23	20	7	29	14	10	20	22	18	22	15	209
Black Heath Coal Co.,		24	25	23	24	24	23	24	25	24	24	24	24	288

TABLE 4.—Fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 11	Michael Grabusky,	Lithuanian,	Miner,	43	S.			Oak Hill,		Fatally injured. Struck by piece of coal that rolled down breast, while removing pillars. Died February 8.
Mar. 13	Joseph Dagutiz,	Russian,	Miner,	25	S.			Buck Run,		Killed by fall of top coal while drilling hole at face of breast.
April 7	Lawrence Purcell,	American,	Laborer,	24	S.			Phoenix Park,		Killed by being squeezed between cars while changing coupling from loaded to empty car. The empty car jumped the track. Outside.
May 1	Joseph Cody,	American,	Miner,	32	S.			Buck Run,		Found dead in spoon gangway. The cause of accident could not be determined from an inspection of the surroundings.
June 1	Joseph Movitsky,	Russian,	Miner,	43	M.	1	3	Lytle,		Electrocuted. While trimming the sides of gangway timber to place sprag between them his axe came in contact with trolley wire.
15	Jacob Blahosky,	Slavonian,	Laborer,	23	S.			Newcastle,	Schuylkill,	Killed by being squeezed between car and gangway timber. While in the act of spragging mine car wheel the car jumped the track and caught him.
Aug. 10	Leo Bickleman,	American,	Motor assistant,	19	S.			Newcastle,		Fatally injured. He was in the act of coupling cars with his knee extending over the rail, when the cars bumped and squeezed his knee. Died the same evening.
14	John Buchannan,	Scotch,	Repairman,	59	M.	1		Glendower,		Fatally injured by falling down manway While traveling monkey airway he missed his footing. Died August 19.
21	Frank Boyer,	American,	Driver,	21	S.			Newcastle,		Kicked by mule that he was driving. Died the same day.
22	Martin Zerbe,	American,	Starter,	52	M.	1	2	Otto,		Fatally injured. While he was placing charge of dynamite on lump of slate in breast battery, the coal rushed, forcing him down the chute. Died 15 minutes later.

Sept.	12	Charles Petrolinits,	Slavonian,	Laborer,	35	S.			Newcastle,		Fatally injured, while he was loading car from chute the coal and culm mixed with water rushed, forcing part of battery out of place and permitting the loose coal in the chute to push him down into tunnel against car. Died in a short time.
Oct.	24	Owen Langton, John Connery, Paul Berlaubis,	American, American, Polish,	Assistant foreman, Miner, Laborer,	37 45 18	M. M. S.	1 1	5 6	Lytle,	Schuylkill,	Scalded while fighting mine fire. October 23 the starter ignited fuse to fire blast in No. 20 breast battery Primrose seam west fifth level. The powder failed to explode, but burned and flamed, igniting the battery timber. Twelve men were overcome by smoke, and it was necessary to use helmets to rescue them. They commenced to fight the fire about 10.30 A. M. On the 24th, an explosion occurred caused by water coming in contact with fire, scalding and otherwise injuring six men. Langton died on the 24th, Connery on the 26th, and Berlaubis on the 25th of October.
	25	Stiney Stancavage,	Polish,	Laborer,	18	S.			Pine Hill,		Suffocated by rush of culm on culm bank while working on same. Outside.
Nov.	22	Jacob Gimbel,	Austrian,	Miner,	41	M.	1	1	Oak Hill,		Killed by fall of top coal while trimming loose pieces of coal at face of pillar after blast.

TABLE 5.—Non-fatal accidents inside and outside of mines.

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 3	John Sebados,	American,	Jig runner,	18	S.	Howard,		Face injured. While prying breaker engine off center with bar, the engine started and the bar struck him. Outside.
12	Frank Matti,	Polish,	Driver,	24	S.	Lytle,		Face lacerated. Kicked by mule.
	John Calosowskey,	Lithuanian,	Miner,	44	M.	Pine Knot,		Finger injured by fall of coal while working at face of breast.
13	John Brown,	Russian,	Driver,	23	S.	Oak Hill,		Hips injured. Squeezed between mine car and concrete wall.
17	James Maley,	American,	Bottomman,	39	S.	Pine Hill,		Ankle injured in attempting to jump on moving car.
18	Hugh McClay,	American,	Miner,	42	M.	Otto,		Shoulder injured by fall of coal while trimming down loose coal at face of breast.
22	Joseph Minasavage,	Russian,	Miner,	36	S.	Buck Run,		Hands and face burned by gas that he ignited when he lighted fuse.
25	Nicholas Andrew,	Greek,	Laborer,	54	M.	Pine Hill,	Schuylkill,	Hip injured by fall of slate.
26	George E. Smith,	American,	Laborer,	45	M.	Newcastle,		Leg fractured. Struck by piece of rock that fell from dumper. Outside.
	William Holloway,	Welsh,	Laborer,	31	M.	Lytle,		Toe injured. While loading car a piece of coal caught his foot against side of car.
	Michael Hobbs,	American,	Miner,	45	M.	Lytle,		Laceration of head and contusion of body. While trimming down loose pieces of coal at face, the top coal fell on him.
Feb. 1	Paul Stickens,	Russian,	Laborer,	37	M.	Lytle,		Ribs fractured. He slipped and fell while lifting lump of coal.
3	Thomas Kurtz,	Polish,	Miner,	52	M.	Otto,		Thumb injured by fall of coal at face of breast.
5	John Farrell,	American,	Laborer,	43	M.	Pine Knot,		Hand injured by fall of coal in heading while sinking prop hole.
7	Walter Leonard,	American,	Laborer,	23	S.	Anchor Washery,		Finger crushed. Caught by coupling while hitching rope to locomotive. Outside.
8	Joseph Lawrence,	Slavonian,	Miner,	26	M.	Otto,		Leg fractured by fall of coal at face of breast.

Feb.	8	Walter Weber,	American,	Carpenter,	20	S.	Oak Hill,			Finger crushed. While scraping ashes from boiler pit he struck his finger against bar near pit door. Outside.
		John Smelgus,	Polish,	Miner,	24	M.	Howard,			Finger injured by fall of coal at face of breast.
	12	Henry Williams,	American,	Laborer,	43	M.	Oak Hill,			Arm fractured, while closing door of dumper. Outside.
		John Hisloskey,	Russian,	Miner,	35	M.	Lytle,			Body bruised by rush of coal from pillar chute in which he was working.
	14	Joseph Bowden,	American,	Laborer,	29	S.	Phoenix Park,			Face injured. Struck by lever used in pulling down dumper. Outside.
	21	Michael McNulty,	American,	Repairman,	26	M.	Pine Knot,			Hand punctured by nail.
	22	James Daley,	American,	Fireman,	44	S.	Glendower,			Hand injured by falling on ice. Outside.
	25	George Branzovich,	Polish,	Laborer,	26	S.	Newcastle,			Foot punctured by nail.
	29	James Kilrain,	American,	Miner,	40	M.	Lytle,			Foot fractured. Caught by lump of coal while starting coal in breast.
Mar.	2	Frank Pierco,	Russian,	Miner,	32	M.	Otto,			Body injured by blast fired by chute miner. The chute miner attached bat-wires to blast and notified gangway miner who also had blast prepared When blast exploded it was discovered that the gangway wires were connected.
		Stephen Cushla,	Russian,	Laborer,	40	M.				
	3	Anthony Lepski,	Polish,	Miner,	67	M.	Oak Hill,			Fingers injured by fall of coal at face and afterwards became infected from mine water.
	4	John McFadden,	American,	Miner,	37	S.	Oak Hill,		Schuylkill,	Head injured by fall of top coal, while drilling hole at face of breast.
	11	Zigmond Zubowich,	American,	Laborer,	21	S.	Oak Hill,			Hips bruised by fall of slate at face of breast.
	11	Joseph Schum,	American,	Slatepicker,	17	S.	Otto,			Fingers crushed. Caught between lumps of coal in breaker. Outside.
	13	Louis Rizzardie,	Tyrolean,	Laborer,	20	S.	Pine Hill,			Fingers injured. Caught in fan cogs while turning fan.
	14	Joseph Bergen,	American,	Driver,	20	S.	Glendower,			Elbow dislocated by falling from chute platform to gangway.
	15	Anthony Tower,	Italian,	Driver,	32	S.	Pine Hill,			Leg fractured. Caught against top of gangway while riding on trip of mine cars.
		Michael Treanoski,	Austrian,	Miner,	39	M.	Lytle,			Face and hands burned by gas. He lighted match to ignite safety lamp and exploded the gas.
	16	William Doyne,	American,	Locomotive switchman	24	S.	Anchor Washery,			Fingers crushed. Caught between coupling and car bumper. Outside.
	20	August Baptiste,	Italian,	Miner,	29	S.	Pine Hill,			Fingers crushed in cog wheels of hand fan that he was turning.
	21	Michael Burkes,	Slavonian,	Machinist,	23	M.	Oak Hill,			Concussion of brain. While removing flange from pipe in breaker he lost his balance and fell 18 feet, striking his head. Outside.

TABLE 5.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Mar. 21	John Snodick,	Slavonian,	Laborer,	36	M.	Pine Hill,		Leg fractured by fall of coal while working at gangway face.
23	Joseph Klem,	Lithuanian,	Miner,	33	S.	Oak Hill,		Head injured by fall of slate at face of breast while tamping hole.
25	Simon Catcowski,	Polish,	Miner,	25	M.	Pine Knot,		Leg fractured. Coal fell in heading and broke the platform on which he was standing, throwing him down chute.
	Frank Bobyock,	Slavonian,	Miner,	32	S.	Otto,		Head injured by fall of coal while pulling down loose pieces after blast.
27	Frank Barnetsky,	Polish,	Driver,	24	S.	Buck Run,		Leg fractured. While trying to control mule he slipped under car wheel.
28	Frank Yanofsky,	Polish,	Fanboy,	18	S.	Pine Hill,		Fingers crushed. Caught in cog wheels of fan while turning it.
	Nathan Succano,	Slavonian,	Miner,	44	M.	Buck Run,		Face and hands burned by gas. He lighted fuse of blast with his pipe and ignited the gas.
	Nicholas Gregonis,	Italian,	Laborer,	23	S.	Pine Hill,	Schuylkill,	Thumb lacerated. While prying down loose coal in heading a piece of coal fell and struck him.
April 7	Peter Calebo,	Italian,	Miner,	29	S.	Lytle,		Hands and face burned by gas. He struck match to ignite his safety lamp and exploded the gas.
	John Mindure,	Polish,	Laborer,	26	S.	Phoenix Park,		Foot injured. Struck by piece of rock that rolled down slope.
12	Stiney Casavage,	Polish,	Miner,	28	M.	Howard,		Back injured by fall of coal in breast while pulling down loose pieces with drill.
	Joseph Rusky,	Russian,	Miner,	50	M.	Otto,		Shoulder injured by fall of slate on pillar.
	Henry Dupont,	French,	Coalfeeder,	59	S.	Oak Hill,		Leg fractured. Caught in feed wheel in breaker. Outside.
18	Dominick Demar,	Italian,	Miner,	35	M.	Oak Hill,		Head and back injured by fall of coal in breast.
27	Andrew Coslo,	Slavonian,	Miner,	39	M.	Howard,		Hand injured by fall of slate at face of of breast.

May	1	Michael Yoscavage,	Slavonian,	Laborer,	45	M.	Pine Knot,			Arm burned by safety lamp.
	4	John Boleto,	Lithuanian,	Miner,	49	M.	Phoenix Park,			Head and hand injured. While pulling down loose pieces after blast, top slate fell on him.
		Earl Dreher,	American,	Switchman,	21	S.	Pine Knot,			Body bruised by falling under car. He was standing on front car of trip when cars bumped. Outside.
	11	Stanley Plava,	Polish,	Miner,	25	M.	Pine Knot,			Face and head injured by fall of coal.
	22	Frank Edmunds,	American,	Slopeman,	24	M.	Pine Hill,			Leg injured. Bumped between cars on shaft bottom.
	23	William Rolinitus,	Lithuanian,	Driver,	22	S.	Pine Knot,			Foot crushed by rail falling on it.
	24	Joseph Perrine,	Russian,	Laborer,	39	M.	Oak Hill,			Head injured by fall of slate on gangway.
June	2	William Holly,	Welsh,	Laborer,	57	M.	Oak Hill,			Foot injured by rail bender falling on it. Outside.
	3	William Dempsey,	American,	Jig runner,	17	S.	Pine Knot,			Arm, shoulder and body bruised. Caught by jig shaft in breaker. Outside.
	12	Samuel Moser,	American,	Laborer,	42	M.	Glendower,			Leg fractured by fall of coal at face of gangway.
	16	John Lapinski,	Russian,	Miner,	34	M.	Otto,			Head injured by fall of coal while trying to pull down loose top.
		Joseph Barton,	Polish,	Miner,	52	M.	Otto,			Leg injured by fall of coal at face of gangway.
	17	Andrew Miller,	Slavonian,	Miner,	32	M.	Pine Knot,			Head injured. Caught by rush of coal in breast while repairing battery.
	22	Charles McGovern,	American,	Laborer,	18	S.	Otto,			Finger cut off. Caught by lump of coal against chute board.
	28	Andrew Kondrat,	Lithuanian,	Miner,	33	M.	Pine Hill,			Ankle fractured. Caught by buggy in breast.
July	3	Charles Rawlis,	Lithuanian,	Miner,	33	S.	Pine Knot,		Schuylkill,	Collar bone fractured and leg lacerated by fall of slate while repairing breast manway.
	10	Peter Kenny,	American,	Miner,	55	M.	Pine Knot,			Ankle fractured by fall of coal while working in breast.
	11	John Kisliskia,	Slavonian,	Driver,	19	S.	Glendower,			Finger lacerated. Caught between door-frame and sprag in moving car.
		John Butisto,	Italian,	Miner,	32	M.	Phoenix Park,			Leg fractured by fall of coal at face of breast.
	19	James Carroll,	American,	Spragger,	26	S.	Pine Knot,			Legs injured. Bumped between mine cars. Outside.
	28	Louis Rush,	Lithuanian,	Miner,	29	M.	Pine Knot,			Finger crushed by fall of slate at gangway face.
	29	Anthony Douches,	Lithuanian,	Miner,	45	M.	Pine Hill,			Back injured by fall of coal at face of breast.
		Joseph McDonald,	American,	Machinist,	19	S.	Wolf Creek Washery,			Back sprained while moving an engine with bar. Outside.
	31	William Roberts,	American,	Laborer,	20	S.	Pine Hill,			Head and arm injured by ash-car body. Outside.
Aug.	1	Herman Stinghen,	Tyrolean,	Miner,	36	M.	Pine Hill,			Knee injured. Struck by lump of coal that rolled down chute.

TABLE 5.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Aug. 1	John Navido,	Russian,	Miner,	45	M.	Otto,		Body injured by fall of slate at face of breast.
5	Raymond Bettinger,	American,	Laborer,	21	S.	Oak Hill,		Thumb crushed while coupling cars. Outside.
7	Samuel Land,	Italian,	Miner,	39	M.	Phoenix Park,		Leg and back injured by fall of slate at face of breast.
12	William Brennan,	American,	Laborer,	17	S.	Pine Knot,		Head injured. Bumped against arch under breaker while riding on locomotive. Outside.
14	Leo McHenry,	American,	Driver,	28	S.	Phoenix Park,		Leg fractured. Caught by car that jumped the track.
	Charles Williams,	American,	Spragger,	18	S.	Otto,		Finger injured. Caught between sprag and post on breaker tip. Outside.
16	Matthew Wickes,	Lithuanian,	Miner,	39	S.	Oak Hill,		Foot injured by fall of rock at face.
	Henry Rosenfelter,	American,	Laborer,	57	M.	Otto,	Schuylkill,	Finger injured. Caught by circular saw while sawing plank. Outside.
17	Stephen Bellock,	Slavonian,	Miner,	40	M.	Oak Hill,		Eye injured by fall of coal while pulling down old timber.
18	Samuel Bural,	Slavonian,	Laborer,	26	M.	Pine Knot,		Two fingers fractured. Caught in coupling between cars. Outside.
	George Vedusky,	Slavonian,	Laborer,	24	S.	Pine Knot,		Foot injured by fall of rock.
19	Chyefe Jefferson,	American,	Laborer,	25	S.	Oak Hill,		Finger fractured. Squeezed between lump of coal, which rolled down chute, and mine car.
22	Andrew Somatcho,	Slavonian,	Laborer,	27	M.	Pine Knot, Thomaston Section		Finger crushed. Caught between collar and leg of set of timber while in act of lifting timber.
30	John Nevilles,	American,	Laborer,	17	S.	Black Heath,		Leg lacerated. Caught and dragged by mine car near top of slope. Outside.
Sept. 12	Stephen Marks,	Slavonian,	Trackman,	40	M.	Glendower,		Abdomen sprained while lifting piece of rock. Outside.
19	George Martsavage,	Lithuanian,	Miner,	34	M.	Pine Hill,		Leg fractured. Caught between timber that he was unloading.

Sept.	20	John Wingaris,	Lithuanian,	Laborer,	21	S.	Pine Hill,		Fingers crushed between rails that he was unloading.
	25	Michael Fotig,	Slavonian,	Laborer,	27	M.	Oak Hill,		Foot punctured. He stepped on nail.
Oct.	11	Anthony Pelvitch,	Polish,	Miner,	36	M.	Phoenix Park,		Leg fractured by fall of top coal at face of breast.
	20	Michael J. Ryan,	American,	Miner,	47	M.	Glendower,		Hand injured by fall of slate.
	21	Charles Lawlin,	Slavonian,	Oiler,	27	S.	Pine Knot,		Hand injured. Struck by revolving shaft in breaker. Outside.
	24	John Charles,	American,	Fireboss,	45	M.	Lytle,		Scalded and otherwise injured while fighting mine fire.
		William Brown,	American,	Miner,	31	M.			
		Simon Balinones,	Russian,	Miner,	29	M.			
	31	Patrick Malley,	American,	Barn boss,	58	M.	Pine Hill,		Shoulder dislocated. While pushing mine car he slipped and fell on rail.
Nov.	4	John Begon,	Lithuanian,	Miner,	43	S.	Oak Hill,		Hand fractured by piece of rock falling on it while working at face of breast.
	6	Promo Deconeine,	Tyrolean,	Laborer,	37	M.	Otto,		Finger crushed by piece of slate in chute while loading car.
	9	George Williams,	American,	Miner,	26	S.	Otto,	Schuylkill,	Skull fractured. He was knocked down chute by lump of coal that he was starting in chute.
	13	James Langton,	American,	Bottomman,	26	S.	Phoenix Park,		Body squeezed between cars that he was pushing.
	25	Anthony Comoronsky	Lithuanian,	Miner,	52	M.	Pine Hill,		Leg injured by fall of coal at face of breast.
	26	John Surnskie,	Austrian,	Fireman,	41	M.	Phoenix Park,		Ribs fractured. Body of ash dumper fell on him. Outside.
	27	Michael Romoshosky	Lithuanian,	Miner,	40	M.	Oak Hill,		Leg injured by fall of coal at face of breast.
	28	Alexander Barton,	Lithuanian,	Miner,	53	M.	Oak Hill,		Shoulder injured. Struck by piece of coal from blast.
	29	Joseph Bradley,	American,	Driver,	37	M.	Pine Hill,		Leg injured. Bumped between mine cars.
Dec.	1	Michael Costno,	Slavonian,	Laborer,	24	S.	Pine Knot,		Finger crushed. Lump of coal caught his hand against side of chute.
	8	Lester Rowland,	American,	Laborer,	18	S.	Pine Knot,		Thumb crushed. Caught between car and timber that he was unloading. Outside.
	19	Eman Renninger,	American,	Driver,	16	S.	Otto,		Leg injured by falling in front of dumper on rock bank. Outside.
		Frank Clouser,	American,	Loader,	59	M.	Otto,		Finger crushed. Caught between ratchet on brake and car feed. Outside.

DESCRIPTION OF ACCIDENT AT LYTLE COLLIERY.

On October 23, at 1:30 P. M., the starter in the West Primrose south dip No. 5 level, Lytle colliery, ignited fuse to fire blast of dynamite on lump of coal in No. 20 breast battery, but the charge failed to explode, and burned and flamed, setting fire to the battery timber. The fire spread rapidly. Twelve men were overcome by the smoke and were rescued by men with helmets.

At 5:30 P. M. I was notified by the superintendent of the Lytle Coal Company that a fire was burning in West Primrose No. 5 level south dip, and that one man was missing and supposed to be inside of the fire. I arrived at the colliery at 6:30 P. M. In the course of an hour or so the missing man was discovered and rescued by men of the rescue corps with helmets. They commenced to fight the fire, but before doing so the place was examined on the inside and outside of the fire and close to the same and no gas was reported present. Having water line and hose convenient, the hose was used with effect in No. 19½ manway, extinguishing the flames. It was then used in the monkey from No. 19½ towards No. 20, putting out the fire that could be seen. It was then removed to and up No. 22½ and in towards No. 20, extinguishing all fire that could be seen. By this time it appeared as if the fire was under control, no sign of flame being present. As I was on the scene all night, I left the mine at 5:00 A. M. At 10:30 A. M., on the 24th, an explosion occurred, and six men who were working in monkey between No. 19½ and No. 20 cleaning and timbering it, were burned and scalded by steam from the water that was being used on the fire. Mine Inspector Donahue, who was present at the time of the accident, informed me that he was in the monkey with the men fifteen minutes before the explosion.

The men working in the monkey on the inside of No. 20 breast were not injured by the explosion. Both ends of this section are now sealed with concrete batteries. They drilled a hole from the surface, a distance of 700 feet approximately, to slush the mouth of a tunnel going north at No. 55, so as to cut off communication with other workings.

Owen Langton, assistant foreman, John Connery, miner, and Paul Berlaubis, miner, died later from their injuries.

CONDITION OF COLLIERIES

PHILADELPHIA AND READING COAL AND IRON COMPANY

Otto, Pine Knot, Thomaston, Phoenix Park, Glendower and John Veith Collieries.—Ventilation, roads, drainage and condition as to safety, good.

LYTLE COAL COMPANY

Lytle Colliery.—Ventilation, roads, drainage and condition as to safety, good.

PINE HILL COAL COMPANY

Pine Hill Colliery.—Ventilation, roads, drainage and condition as to safety, good.

BUCK RUN COAL COMPANY.

Buck Run Colliery.—Ventilation, roads, drainage and condition as to safety, good.

OAK HILL COAL COMPANY

Oak Hill Colliery.—Ventilation fair. Drainage was fair in some sections and bad in others. Roads and condition as to safety, good.

DARKWATER COAL COMPANY

New Castle Colliery.—Ventilation and roads, fair. Drainage bad. Condition as to safety, good.

ELLSWORTH COAL COMPANY

Ellsworth Colliery.—Ventilation, drainage, roads and condition as to safety, good.

WHITE AND COMPANY

Howard Colliery.—Ventilation and roads, fair. Drainage bad. Condition as to safety, good.

BUTCHER CREEK COAL COMPANY

Laurel Run Colliery.—Ventilation and roads, fair. Drainage bad. Condition as to safety, good.

BLACK HEATH COAL COMPANY

Black Heath Colliery.—Ventilation, roads and drainage, fair. Condition as to safety, good.

IMPROVEMENTS

PHILADELPHIA AND READING COAL AND IRON COMPANY

Otto Colliery.—Completed Inside: Tunnel from Bottom Split vein, fifth lift shaft workings, to Middle Split vein, White Ash slope.

New lift on White Ash slope, at an elevation of 493 feet.

Completed Outside: Installed electric slush car; also electric lighting at shaft. Rebuilt slush hopper.

In Progress Outside: Installing rock crusher.

Pine Knot Colliery.—Completed Inside: Haulage tunnel, 8 feet by 12 feet, from West Holmes, North dip, to Top Split, North dip, at breast No. 21½, second level, No. 2 shaft.

Air tunnel, 7 feet by 8 feet, from West Holmes, North dip, to Top Split, North dip, at breast No. 22, second level, No. 2 shaft.

Installed electric haulage on second level, No. 2 shaft.

Traveling-way in Skidmore vein from No. 1 to No. 2 shaft.

Hosiptal on second level, No. 2 shaft.

In Progress Outside: Saw mill in timber yard.

Installing D. C. generating apparatus; hopper and track for electric dump car, and electric lighting.

Anchor Washery.—In Progress: Hopper, track and electric dump car at bank.

Phoenix Park Colliery.—Completed Inside: Hospital in Peach Mountain slope.

Tunnel from Tracy to Little Tracy vein, at Old Level of Morgan's slope, No. 6 Tracy slope.

In Progress Inside: Sinking No. 6 Tracy slope; and No. 1 underground slope on Diamond vein.

Driving planes as follows: No. 1 plane, east 2nd lift, No. 2 underground slope, at breast No. 7; No. 2 plane, east 2nd lift, No. 2 underground slope, at breast No. 19; No. 3 plane, east 2nd lift, No. 2 underground slope, at breast No. 25; plane at breast No. 6, in east 4th lift, Tracy gangway, No. 6 Tracy slope.

Driving tunnel in West Top Tracy gangway, Tracy power plane at breast No. 75; and tunnel from Tracy vein to Tracy vein, through local saddle, in east 3rd lift, No. 6 slope.

Completed Outside: Installed 35 K. W. generator for electric lighting at colliery.

Glendower Colliery.—In Progress Inside: Basin slope, Top Split vein, West Glendower; basin slope, Top Split vein, No. 1 level west; and basin slope, Slope vein, west third lift.

Completed Outside: Stable at West Glendower.

In Progress Outside: Washhouse at Taylorsville.

LYTLE COAL COMPANY

Lytle Colliery.—Installed a 24 by 46 by 14 by 48 inch compound condensing pump on the 6th level.

Drove 150 yards sump tunnel, 6th level.

Drove 375 yards of haulage tunnel and 300 yards of ventilating tunnel.

A 100 H. P. electric hoist was installed on No. 7 slope, west north dip, Bottom Member, and 270 yards of slope were sunk.

An electrically operated force fan was installed in the west south dip, 5th level, and an automatic safety device, electrically operated, showing position of fa s or keeps, was installed in the main hoisting shaft.

PINE HILL COAL COMPANY

Pine Hill Colliery.—Outside: An extension has been built for housing a new 600-gallon per minute Scranton steam pump, to keep the colliery supplied with fresh water. A new 2,500-foot flume has been built for the purpose of keeping the drainage of the colliery away from old slopes and mine breaches, and preventing culm and ashes from running into the natural drainage of the vicinity.

A washery containing three Hazleton jugs, one set of rolls, with five large pockets, has been built for the purpose of rerunning some old banks. This is known as the Brock Washery.

Inside: A new pump house has been built at the foot of the shaft to accommodate a 2,500-gallon per minute Scranton steam pump. A plane has been made in the West Ridge, third level. A new slope has been driven from the third level to the fourth level in the Buck Mountain vein, and a steam hoisting engine installed of sufficient capacity to hoist three mine cars at a time. This slope is now almost ready to run and it is intended to continue it down to a fifth and sixth level at once. It is to be a permanent slope and is to take the place of the present slope from the third level of the Black Heath, which is unable to handle the increasing tonnage from the lower levels. A new concrete feed-room has been placed on the fourth level.

A plane has been placed from the fourth level, Black Heath, to a counter gangway. A proving slope is being driven in the Black Heath vein from the fourth level, in order to prove the depth of the basin.

A slope is being driven from the fourth level, Buck Mountain, in the drift, which is now ready for the turning off of a fifth level. This slope will eventually be driven to the third level, shaft, and will be approximately 2,300 feet long.

OAK HILL COAL COMPANY

Oak Hill Colliery.—No. 1 Drift. Tunnel driven from Buck to Ridge, 100 feet. 5th level tunnel from Buck to Ridge, 45 feet, not yet finished. Small air shaft sunk to Ridge vein, 27 feet deep, for ventilation. Overhead tunnel driven from Red Ash to White Ash, 3rd level, 62 feet long. Tunnel driven from White Ash to Split of White Ash, 113 feet. Tunnel from Red Ash to White Ash in new slope, 112 feet, not yet finished.

Tunnel from Skidmore to Black Heath, 3rd level, 200 feet long, not quite finished.

A new 18 by 30 by 10 by 36-inch compound condensing Goyne pump was installed at the foot of the shaft in the 5th level.

A new scraper line was built from the breaker to the culm bank a distance of 700 feet, for the purpose of conveying these banks to the breaker.

A brick hospital, wash-house and supply-house are in course of construction on the surface.

A hospital was built on the shaft 4th level.

A 10-inch column line was put in from the 5th level to the 3rd level, also a 10-inch column line on the pump slope from the 4th level to the surface, a distance of 1,200 feet.

WHITE AND COMPANY

Howard Colliery.—Remodeled the breaker and placed 4 new Christ improved jigs. Other minor improvements.

New opening driven to the surface in No. 1 slope, which can be used as second outlet.

BUTCHER CREEK COAL COMPANY

Laurel Run Colliery.—Erected steel hospital inside and placed speaking tube in slope.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in the Armory, Pottsville, June 6 and 7. The Board of Examiners was composed of the following persons: Michael J. Brennan, Inspector, Pottsville; James B. Neale, Superintendent, Buck Run; Timothy Brennan, Miner, Heckschersville; Henry Gottschall, Miner, Branchdale.

The following persons passed a satisfactory examination and were granted certificates:

MINE FOREMEN

David J. Hinkin, Minersville; John Flaherty, Branchdale.

TWENTIETH DISTRICT

SCHUYLKILL COUNTY

Mahanoy City, February 23, 1917.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor of transmitting herewith my annual report as Inspector of Mines for the Twentieth Anthracite District, for the year ending December 31, 1916.

Respectfully submitted,

P. C. FENTON,
Inspector.

SUMMARY OF STATISTICS

Number of collieries,	9
Number of mines,	15
Number of mines in operation,	18
Number of gaseous mines in operation,	18
Number of non-gaseous mines in operation,	.....
Number of tons of coal shipped to market,	2,559,829
Number of tons used at mines for steam and heat,	471,165
Number of tons sold to local trade and used by employes,	43,258
Number of tons produced,	3,074,252
Number of tons produced by compressed air machines,	.....
Number of tons produced by electrical machines,	.....
Number of persons employed inside of mines,	4,423
Number of persons employed outside,	1,762
Number of persons employed inside between 16 and 21 years,	461
Number of persons employed outside between 14 and 21 years,	535
Number of fatal accidents inside,	21
Number of fatal accidents outside,	5
Number of non-fatal accidents inside,	27
Number of non-fatal accidents outside,	2
Number of tons of coal produced per fatal accident inside,	146,393
Number of tons produced per fatal accident outside,	754,850
Number of tons produced per fatal accident inside and outside,	118,240
Number of persons employed per fatal accident inside,	211
Number of persons employed per fatal accident outside,	352
Number of persons employed per fatal accident inside and outside,	238
Number of persons employed per non-fatal accident inside,	164
Number of persons employed per non-fatal accident outside,	881
Number of persons employed per non-fatal accident inside and outside,	213
Number of wives made widows,	16
Number of children made orphans,	36
Number of steam locomotives inside,	.....
Number of steam locomotives outside,	17
Number of compressed air locomotives inside,	17
Number of compressed air locomotives outside,	.....
Number of electric motors inside,	16
Number of electric motors outside,	2
Number of gasoline locomotives inside,	.....
Number of gasoline locomotives outside,	.....
Number of cylindrical boilers,	.....
Number of tubular boilers,	166
Number of steam engines of all classes,	321

Number of internal combustion engines (gas),	1
Number of electric dynamos,	5
Number of pumps of all classes,	169
Number of pumps delivering water to surface,	38
Number of air compressors,	15
Number of fans in use,	23
Number of new mines opened,	.....
Number of old mines abandoned,	.....

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Philadelphia and Reading Coal and Iron Company, ...	2,540,399
Lehigh Valley Coal Company, ...	533,853
Total, ...	3,074,252

Production by Counties

Schuylkill, ...	3,074,252

TABLE 18.—Fatal and non-fatal accidents inside and outside of mines, number of tons of coal produced per accident, number of persons employed, number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Numbe rof employes inside	Number of employes outside	Total number of employes	Number of employes inside per fatal accident	Number of employes outside per fatal accident	Number of employes inside per non-fatal accident	Number of employes outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Philadelphia and Reading Coal and Iron Co.,	20	3	23	25	2	27	127,020	101,615	3,818	1,476	5,294	190	492	153	738
Lehigh Valley Coal Co.,	1	2	3	2		2	533,853	266,926	605	286	891	605	143	302	
Totals and averages,	21	5	26	27	2	29	146,393	113,861	4,423	1,762	6,185	211	352	164	881

TABLE C.—Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,					1					1			2	9.53
Falls of slate,	1							1	1				3	14.29
Falls of roof,			5							1			6	28.57
Mine cars,									1				1	4.76
Explosions of powder and dynamite,	2			1									3	14.29
Blasts, premature and otherwise	1								1				2	9.52
Falling down manway,									1				1	4.76
Falling down rock hole,			1										1	4.76
Fall of timber,	1		1										2	9.52
Totals,	5		7	1	1			1	4	2			21	100.00
Outside														
Cars,									1				1	20.00
Machinery,	1												1	20.00
Suffocation in chutes, etc.,			2										2	40.00
Pinned between timber,												1	1	20.00
Totals,	1		2						1			1	5	100.00
Grand totals,	6		9	1	1			1	5	2		1	26	

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,		1		1				1	2	1	1	1	8	29.63
Falls of slate,				1								2	3	11.11
Falls of roof,			1		1								2	7.41
Mine cars,				2							1	1	4	14.82
Explosions of gas,		2				2			2				6	22.23
Explosions of powder and dynamite,				1									1	3.70
Blasts, premature and otherwise,								1					1	3.70
Mules,											1		1	3.70
Falling prop,											1		1	3.70
Totals,		3	1	5	1	2		2	4	1	4	4	27	100.00
Outside														
Cars,					1				1				2	100.00
Totals,					1				1				2	100.00
Grand totals,		3	1	5	2	2		2	5	1	4	4	29	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,	4	----	2	----	1	----	----	1	4	2	----	----	14
Miners' laborers,	1	----	1	1	----	----	----	----	----	----	----	----	3
Starters,	----	----	1	----	----	----	----	----	----	----	----	----	1
Switchmen,	----	----	2	----	----	----	----	----	----	----	----	----	2
Roadmen,	----	----	1	----	----	----	----	----	----	----	----	----	1
Totals,	5	----	7	1	1	----	----	1	4	2	----	----	21
Outside													
Engineers and firemen,	----	----	1	----	----	----	----	----	----	----	----	----	1
Laborers,	1	----	----	----	----	----	----	----	----	----	----	----	1
Timber cutters,	----	----	----	----	----	----	----	----	----	----	----	1	1
Car loaders,	----	----	----	----	----	----	----	----	1	----	----	----	1
Ashmen,	----	----	1	----	----	----	----	----	----	----	----	----	1
Totals,	1	----	2	----	----	----	----	----	1	----	----	1	5
Grand totals,	6	----	9	1	1	----	----	1	5	2	----	1	26

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Assistant mine foremen,	----	----	----	----	----	----	----	----	1	----	----	----	1
Miners,	----	3	----	3	1	2	----	2	2	----	----	3	16
Miners' laborers,	----	----	1	----	----	----	----	----	1	----	2	----	4
Drivers and runners,	----	----	----	1	----	----	----	----	----	----	2	----	3
Doorboys and helpers,	----	----	----	1	----	----	----	----	----	----	----	----	1
Dumpmen,	----	----	----	----	----	----	----	----	----	----	----	1	1
Loaders,	----	----	----	----	----	----	----	----	----	1	----	----	1
Totals,	----	3	1	5	1	2	----	2	4	1	4	4	27
Outside													
Topmen,	----	----	----	----	----	----	----	----	1	----	----	----	1
Loaders,	----	----	----	----	1	----	----	----	----	----	----	----	1
Totals,	----	----	----	----	1	----	----	----	1	----	----	----	2
Grand totals,	----	3	1	5	2	2	----	2	5	1	4	4	29

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	1	----	4	----	----	----	----	----	1	----	----	----	6
English,	2	----	----	----	----	----	----	----	----	----	----	----	2
Welsh,	----	----	1	----	----	----	----	----	----	----	----	----	1
Polish,	1	----	----	1	1	----	----	----	2	----	----	----	5
Italian,	----	----	----	----	----	----	----	----	----	1	----	----	1
Slavonian,	----	----	----	----	----	----	----	----	----	1	----	1	2
Lithuanian,	2	----	4	----	----	----	----	1	2	----	----	----	9
Totals,	6	----	9	1	1	----	----	1	5	2	----	1	26

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	----	----	----	1	1	----	----	----	2	----	----	1	5
German,	----	1	----	----	1	----	----	----	----	----	----	----	2
Polish,	----	1	----	2	----	----	----	----	2	----	1	2	8
Italian,	----	----	----	1	----	----	----	----	----	----	----	----	1
Lithuanian,	----	1	----	1	----	2	----	2	----	1	1	1	9
Austrian,	----	----	----	----	----	----	----	----	1	----	----	----	1
Russian,	----	----	----	----	----	----	----	----	----	----	1	----	1
Greek,	----	----	1	----	----	----	----	----	----	----	----	----	1
Syrian,	----	----	----	----	----	----	----	----	----	----	1	----	1
Totals,	----	3	1	5	2	2	----	2	5	1	4	4	29

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number ofsplits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening: Shaft — Depth	Slope (Coal or Rock) — Length	Slope (Coal or Rock) — Average pitch—degrees	Drift	Gaseous or non gaseous	Number and types of safety lamps used: Flame	Number and types of safety lamps used: Electric
Philadelphia and Reading Coal and Iron Co.										
Ellangowan Colliery:										
Ellangowan,	Schuylkill,	Western Middle, Anthracite Field,								
		Orchard,	144							
		Big Primrose,	144							
		Little Primrose,	36							
		Holmes,	168							
		Four Foot,	48	334	1,500	19		Gaseous,	132	
		Mammoth,	504							
		Skidmore,	48							
		Seven Foot,	36							
		Buck Mountain,	168							
Saint Nicholas Colliery:										
Saint Nicholas,	Schuylkill,	Mammoth,	370							
		Skidmore,	50							
		Seven Foot,	60		1,310	51		Gaseous,	180	
		Buck Mountain,	186							
		Little Buck,	40							

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening: Shaft — Depth	Slope (Coal or Rock) — Length	Slope (Coal or Rock) — Average pitch—degrees	Drift	Gaseous or non-gaseous	Number and types of safety lamps used: Flame	Number and types of safety lamps used: Electric
Suffolk Colliery:										
Suffolk,	Schuylkill,	Spohn,	54							
		Little Tracy,	102							
		Big Tracy,	120							
		Diamond,	126							
		Orchard,	128							
		Primrose Top,	68		956	11		Gaseous,	232	
		Primrose Middle,	64		623	19		Gaseous,		
		Primrose Bottom,	36		895	26		Gaseous,		
		Holmes,	132							
		Four Foot,	48							
		Mammoth,	504							
		Skidmore,	78							
		Seven Foot,	108							
Maple Hill Colliery:										
Maple Hill,	Schuylkill,	Primrose,	144							
		Little Primrose,	36							
		Holmes,	168							
		Four Foot,	48	119				Gaseous,	1,611	
		Mammoth,	450	958				Gaseous,		
		Skidmore,	48							
		Seven Foot,	100							
		Buck Mountain,	164							
Tunnel Ridge Colliery:										
Tunnel Ridge,	Schuylkill,	Mammoth,	294							
		Skidmore,	52		1,130	55		Gaseous,	447	
		Seven Foot,	48							
		Lykens,	36							

Mahanoy City Colliery:									
Mahanoy City,	Schuylkill,	Tracy, 100 Diamond, 124 Orchard, 126 Primrose, 66 Little Primrose, 48 Holmes, 130 Mammoth, 300 Skidmore, 79 Seven Foot, 107 Buck Mountain, 166	1,090		33		Gaseous,	71	
North Mahanoy Colliery:									
North Mahanoy,	Schuylkill,	Holmes, 166 Mammoth, 294 Skidmore, 60 Seven Foot, 50 Buck Mountain, 170		1,120	11		Gaseous,	69	
Knickerbocker Colliery:									
Knickerbocker,	Schuylkill,	Primrose, 142 Little Primrose, 48 Holmes, 166 Four Foot, 48 Mammoth, 250 Skidmore, 50 Seven Foot, 36 Buck Mountain, 166		765	44		Gaseous,	175	
Lehigh Valley Coal Co. Park Colliery:									
No. 1 Slope,	Schuylkill,	Mammoth, 168 Skidmore, 36 Seven Foot, 36 Buck Mountain, 96		290	60		Gaseous,	8	
No. 2 Slope,	Schuylkill,	Mammoth, 108 Seven Foot, 48 Buck Mountain, 42		800	22		Gaseous,		
No. 3 Slope,	Schuylkill,	Skidmore, 48 Seven Foot, 36 Buck Mountain, 168		1,300	35		Gaseous,	7	
No. 4 Slope,	Schuylkill,	Skidmore, 48 Seven Foot, 36 Buck Mountain, 168		950	44		Gaseous,	4	
No. 7 Slope,	Schuylkill,	Skidmore, 168 Seven Foot, 36 Buck Mountain, 150		600	42		Gaseous,		
Primrose Section,	Schuylkill,	Primrose, 96 Mammoth, 204 Skidmore, 60 Seven Foot, 48 Buck Mountain, 120		3,150	12		Gaseous,		

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number inside
Philadelphia and Reading Coal and Iron Co.												
Ellangowan Colliery:												
Ellangowan,	Schuylkill,	Western Middle,										
		Anthracite Field,										
		Orchard,										
		Big Primrose,										
		Little Primrose,										
		Holmes,	Guibal,	15	76	0.5	Steam,	111,227	111,857	11,750	11	314
		Four Foot,	Guibal,	15	80	0.7	Steam,	26,876	27,095	3,650	3	93
		Mammoth,	Guibal,	21	70	1.0	Steam,	64,844	65,285	9,700	10	161
		Skidmore,										
		Seven Foot,										
		Buck Mountain,										
Saint Nicholas Colliery:												
Saint Nicholas,	Schuylkill,	Mammoth,										
		Skidmore,										
		Seven Foot,	Guibal,	21	90	2.3	Steam,	47,580	47,880	38,960	10	258
		Buck Mountain,										
		Little Buck,										
Suffolk Colliery:												
		Spohn,	Guibal,	20	60	0.9	Steam,	22,217	22,445	8,472	2	192
		Little Tracy,	Guibal,	18	69	1.1	Steam,	13,409	13,585	7,284	2	128
		Big Tracy,	Guibal,	18	65	1.1	Steam,	35,786	36,337	19,012	5	172
		Diamond,										
		Orchard,										
		Primrose Top,										

Suffolk,	Schuylkill,	Primrose Middle, Primrose Bottom, Holmes, Four Foot, Mammoth, Skidmore, Seven Foot,											
Maple Hill Colliery:													
Maple Hill,	Schuylkill,	Primrose, Little Primrose, Holmes, Four Foot, Mammoth, Skidmore, Seven Foot, Buck Mountain,	Guibal, Guibal, Guibal, Guibal,	21 21 21 21	80 75 75 70	1.9 1.7 1.8 1.5	Steam, Steam, Steam, Steam,	66,440 20,300 146,530 50,330	67,450 20,800 148,750 51,080	34,530 10,200 75,760 20,360	16 9 14 6	188 90 602 109
Tunnel Ridge Colliery:													
Tunnel Ridge,	Schuylkill,	Mammoth, Skidmore, Seven Foot, Lykens,	Guibal, Guibal,	15 21	110 85	2.2 2.6	Steam, Steam,	58,471 46,728	59,743 78,401	17,953 18,526	6 8	200 157
Mahanoy City Colliery:													
Mahanoy City,	Schuylkill,	Tracy, Diamond, Orchard, Primrose, Little Primrose, Holmes, Mammoth, Skidmore, Seven Foot, Buck Mountain,	Guibal, Guibal,	12 21	80 86	0.9 1.9	Electricity, Steam,	18,921 85,305	19,365 87,595	4,625 26,480	2 10	133 315
North Mahanoy Colliery:													
North Mahanoy,	Schuylkill,	Holmes, Mammoth, Skidmore, Seven Foot, Buck Mountain,	Guibal,	21	80	1.1	Steam,	175,828	63,400	179,616	13	475
Knickerbocker Colliery:													
Knickerbocker,	Schuylkill,	Primrose, Little Primrose, Holmes, Four Foot, Mammoth, Skidmore, Seven Foot, Buck Mountain,	Guibal,	18	92	1.8	Steam,	59,242	60,340	56,788	10	231

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Lehigh Valley Coal Co. Park Colliery:												
No. 1 Slope,	Schuylkill,	Mammoth, Skidmore, Seven Foot, Buck Mountain,	Sirocco,	9	113	1.2	Steam,	52,000	55,000	18,000	5	93
No. 2 Slope,	Schuylkill,	Mammoth, Seven Foot, Buck Mountain,	Sturtevant,	14	65	0.6	Steam,	16,000	18,000	15,000	1	97
No. 3 Slope,	Schuylkill,	Skidmore, Seven Foot, Buck Mountain,	Sirocco,	8	130	1.0	Steam,	40,000	41,000	30,000	7	110
No. 4 Slope,	Schuylkill,	Skidmore, Seven Foot, Buck Mountain,	Guibal,	16	85	0.5	Steam,	35,000	37,000	20,000	6	68
No. 7 Slope,	Schuylkill,	Skidmore, Seven Foot, Buck Mountain,	Sturtevant,	6	150	1.0	Steam,	18,000	20,000	10,000	1	43
Primrose Section,	Schuylkill,	Primrose, Mammoth, Skidmore, Seven Foot, Buck Mountain,	Jeffrey,	8	160	1.8	Electricity,	110,000	112,000	60,000	11	229

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	General Superintendent	Post Office	Superintendent	Post Office	Railroad to Mine
Philadelphia and Reading Coal and Iron Co.						
Ellangowan,	Schulykill,	E. E. Kaercher,	Pottsville,	John H. Pollard, Div. Supt.	Mahanoy City,	
Saint Nicholas,				J. P. McDonald, Dist. Supt.	Saint Nicholas,	
Suffolk,						
Maple Hill,				J. H. Pollard, Div. Supt.	Mahanoy City,	
Knickerbocker,						
Tunnel Ridge,	Schuylkill,	E. E. Kaercher,	Pottsville,	W. H. Richards, Dist. Supt., (Inside).	Mahanoy City,	Philadelphia and Reading.
Mahanoy City,				F. B. Dawson, Dist. Supt. (Outside).	Mahanoy City,	
North Mahanoy,						
Lehigh Valley Coal Co.						
Park,	Schuylkill,	Thomas Thomas,	Wilkes-Barre,	Dellwyn Wolfe,	Park Place,	Lehigh Valley.
Springdale Washery,						

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives		
										Pounds of black powder used	Pounds of dynamite used	Pounds of permissible explosives used
Philadelphia and Reading Coal and Iron Co.												
Ellangowan,	Schuylkill,	288,767	42,570	1,105	332,442	265	861	2	3	84,050	71,174	
Saint Nicholas,		180,101	43,479	416	223,996	278	376			25	43,945	20,375
Suffolk,		268,713	33,023	1,646	303,382	272	723	1	5	36,675	93,175	25
Maple Hill,		593,995	69,364		663,359	267	1,205	10	14	189,850	92,260	114,150
Tunnel Ridge,		191,019	60,526	232	251,777	255	533	4	2	2,825	106,989	8,375
Mahanoy City,		220,662	35,276	32,656	288,594	271	583	2	2	19,375	109,677	1,875
North Mahanoy,		271,388	45,917	4,042	321,347	260	690	3	1	38,875	103,218	
Knickerbocker,		134,386	21,116		155,502	265	320	1		3,250	24,013	31,699
Totals,		2,149,031	351,271	40,097	2,540,399		5,294	23	27	374,925	644,451	177,099
Lehigh Valley Coal Co.												
Park,	Schuylkill,	329,875	119,614	3,161	452,650	261	865	3	2	60,275	82,968	100,320
Springdale Washery,		80,923	280		81,203	218	26					
Totals,		410,798	119,894	3,161	533,853		891	3	2	60,275	82,968	100,320
Grand totals,		2,559,829	471,165	43,258	3,074,252		6,185	26	29	435,200	727,419	277,419

TABLE 2.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Name of Operators	County	Power Plant: Boilers: Cylindrical: Number	Cylindrical: Total horse power	Tubular: Number	Tubular: Total horse power	Engines: Steam Engines (All Classes): Number	Steam Engines: Total horse power	Internal Combustion Engines (Gas): Number	Internal Combustion: Total horse power	Electric Dynamos (All Classes): Number	Electric Dynamos: Total kilowatts	Pumps: Number	Total capacity in gallons per minute	Pumps Delivering Water to the Surface: Number	Approximate number of gallons per minute	Haulage: Number of horses and mules	Locomotives: Gasoline	Steam	Air	Electric	Air Compressors: Number	Total capacity cubic feet per minute
Philadelphia and Reading Coal and Iron Co.,	Schuylkill,	----	----	136	17,950	265	37,763	----	----	3	1,000	120	103,787	26	9,154	--	--	13	17	13	13	6,973
Lehigh Valley Coal Co.,		----	----	30	6,640	56	10,630	1	30	2	375	49	20,400	12	8,000	--	--	4	----	5	2	838
Totals,		----	----	166	23,690	321	48,393	1	30	5	1,375	169	124,187	38	17,154	57	----	17	17	18	15	7,811

TABLE 3.—Part 1.—Number of each class of employes inside and outside of mines

Names of Operators	County	Mine foremen	Assistant mine foremen	Fire bosses	Miners	Miners' laborers	Machine miners	Machine runners and scrapers	Drivers and runners	Motormen and assistants	Doorboys and helpers	Trackmen and bratticemen	Timbermen and rockmen	Pumpmen and pipemen	Electricians and helpers	All other employes	Total inside	Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Machinists and helpers	Trackmen and helpers	Slate pickers (boys)	Slate pickers (men)	Office employes	All other employes	Total outside	Grand total inside and outside
Philadelphia and Reading Coal and Iron Co.	Schuylkill,	11	109		1,229	667			194	1	39	113	180	19		1,256	3,818	1	7	57	216	12	8	197	60	41	878	1,476	5,294
		3	25		292	132			35	8	8	15	23	10	4	50	605		4	21	61	6	5	11		4	173	286	891
Lehigh Valley Coal Co.																												
Totals,		14	134		1,521	799			229	9	47	128	203	29	4	1,306	4,423	1	11	78	277	18	13	208	60	45	1,051	1,762	6,185

TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Total
Philadelphia and Reading Coal and Iron Co.,	Schuylkill,	23	22	24	17	19	20	24	26	23	24	22	23	267
Lehigh Valley Coal Co.,		25	22	23	17	24	21	19	24	24	24	18	20	261

TABLE 4.—Fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 5	John Kelma,	Lithuanian,	Miner,	28	S.			Park	Schuylkill,	Killed by fall of slate at face of breast.
10	Anthony Colcson,	English,	Miner,	49	M.	1	4	North Mahanoy,		Killed by explosion of dynamite. While traveling up the manway to the counter gangway, a box of dynamite that they were carrying exploded.
10	Anthony Coleson,	American,	Laborer,	23	M.	1				
20	Emanuel Maddock,	English,	Laborer,	70	M.	1	1	North Mahanoy,		Killed by being caught in scraper line. Instead of going around the regular traveling road he climbed over the banister and fell into the line. Outside.
21	Joseph Matulis,	Lithuanian,	Miner,	54	M.	1	4	Tunnel Ridge,		Killed by falling timber. While in the act of removing a set of timber, the set next to it discharged.
31	Mike Yonalavage,	Polish,	Miner,	35	M.	1	3	Maple Hill,		Killed by premature blast at face of breast.
Mar. 2	Anthony Moseofski,	Lithuanian,	Laborer,	37	S.			Maple Hill,		Killed by fall of rock at face of breast.
5	John Siteavage,	Lithuanian,	Roadman,	39	M.	1		Maple Hill,	Schuylkill,	Killed by fall of rock. They were working at the bottom of a bore hole, which was drilled from the surface down to a breast in the Mammoth vein for the purpose of conveying slush into the mines. The boss had told the man in charge the day before to remove a prop that was in the road by blasting it out. He (man in charge) ignored the instructions, sawed the prop about half-way through, and then chopped the remainder with an axe. The roof fell about a half hour later. One of the laborers told the chargeman that he thought the roof was working, but the chargeman paid no attention and in a few minutes the rock fell.
	Thomas Dormer,	American,	Switchman,	24	S.					
	Steve O'Peck,	Lithuanian,	Switchman,	21	S.					

Mar.	7	William Swartz,	American,	Ashman,	27	S.			Park,			Smothered. They were taking a dumper of ashes from the boiler house out on the bank to be unloaded, when a breach in the old workings occurred, taking them down in the mine. Outside.
		David Jenkins,	Welsh,	Engineer,	32	S.						
	22	William Ringheiser,	American,	Miner,	42	S.			Maple Hill,			Killed by falling down rock hole drilled from the bottom split to the top split of the Mammoth seam.
	24	Michael Doolin,	American,	Miner,	59	M.	1		Maple Hill,			Killed by fall of rock on gangway while preparing a place for set of timber.
	30	Joe Wilchinskey,	Lithuanian,	Starter,	50	M.	1	1	Tunnel Ridge,			Killed by falling timber on main gangway. A set of timber was discharged by a derailed car drawn by locomotive. Died in hospital, April 1.
April	7	Bolick Androvitz,	Polish,	Laborer,	24	M.	1		Ellangowan,			Internally injured by explosion of a charge at face of gangway while ramming a tight cartridge into hole. Died in hospital April 8.
May	25	Matt. Weirschock,	Polish,	Miner,	32	M.	1	2	Maple Hill,			Internally injured by fall of coal at face of skip. Died in hospital the same day.
Aug.	3	Ant. Skerzinski,	Lithuanian,	Miner,	48	M.	1	1	Maple Hill,			Killed by fall of slate while examining roof on gangway.
Sept.	6	Joseph Lupkis,	Polish,	Car loader,	39	S.			Ellangowan,			Killed by falling under railroad car that was in motion while crossing track near breaker. Outside.
	9	Jos. Sucaluskey,	Lithuanian,	Miner,	52	M.	1	2	Knickerbocker,	Schuylkill,		Internally injured by premature blast while starting battery. Died in hospital the same day.
	15	Hardy Honicker,	American,	Miner,	49	S.			Suffolk,			Killed by being run over by mine car on main gangway.
	25	Lucas Baeczowskie,	Polish,	Miner,	40	S.			Tunnel Ridge,			Killed by falling down manway while getting away from blast. Died in hospital the next day.
	27	John Willitski,	Lithuanian,	Miner,	51	M.	1	4	Maple Hill,			Internally injured by fall of slate in heading while skipping pillar. Died in hospital September 30.
Oct.	10	Joseph Gregor,	Italian,	Miner,	36	M.	1	2	Mahanoy City,			Internally injured by fall of rock at face of gangway while placing set of timber. Died in hospital October 12.
	28	Stephen Nasko,	Slavonian,	Miner,	37	M.	1	7	Mahanoy City,			Internally injured by fall of coal at face of breast, while dressing down some loose material. Died in hospital November 26.
Dec.	8	Jos. Goblic,	Slavonian,	Timber cutter,	36	M.	1	5	Tunnel Ridge,			Internally injured. While sawing timber on the bank, a stick rolled on him. Died in hospital December 14. Outside.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Feb. 11	Martin Kruczin,	Polish,	Miner,	30	M.	Maple Hill,		Face and hands burned by explosion of gas at face of breast.
	Joe Zuberski,	Lithuanian,	Miner,	31	M.	"		" " " " "
12	Gust. Smith,	German,	Miner,	45	M.	Suffolk,		Injured by fall of coal while robbing pillars.
Mar. 24	Paul Progock,	Greek,	Laborer,	24	S.	Maple Hill,		Injured by fall of roof while reopening gangway.
April 3	Mike Muskal,	Lithuanian,	Miner,	40	M.	Maple Hill,		Face and hands burned by explosion of dynamite at face of breast.
4	Michael O'Brien,	American,	Runner,	21	M.	Mahanoy City,		Injured by being squeezed between mules and mine car.
5	Joe Benshefskie,	Polish,	Miner,	29	S.	Maple Hill,		Injured by fall of coal at face of breast.
	Aloisus Totsh,	Polish,	Doorboy,	17	S.	Maple Hill,		Leg injured by mine car on gangway.
8	Urbine Urbane,	Italian,	Miner,	21	S.	Mahanoy City,		Injured by fall of slate at face of breast.
May 20	Simon Swartz,	German,	Miner,	30	M.	North Mahanoy,		Injured by fall of roof at face of gangway.
29	Charles Port,	American,	Loader,	18	S.	Suffolk,	Schuylkill,	Injured by being caught between car and breaker. Outside.
June 27	Clem. Sofinangis,	Lithuanian,	Miner,	45	M.	Maple Hill,		Face, hands and body burned by explosion of gas at face of breast.
	Ant. Supovitch,	Lithuanian,	Miner,	24	S.	"		" " " " "
Aug. 14	Peter Link,	Lithuanian,	Miner,	33	M.	Ellangowan,		Injured by fall of coal while shoveling into chute.
24	Charles Argo,	Lithuanian,	Miner,	52	M.	Maple Hill,		Injured by premature blast at face of breast.
Sept. 18	Stiney Bugdanovich,	Polish,	Miner,	40	M.	Suffolk,		Injured by fall of coal at face of breast.
19	George Lesko,	Austrian,	Topman,	19	S.	Suffolk,		Injured by being caught between cars. Outside.
22	John Murick,	Polish,	Miner,	27	M.	Ellangowan,		Injured by fall of coal at face of breast.
28	William Evans,	American,	Assistant foreman,	30	M.	Maple Hill,		Face and hands burned by explosion of gas at face of gangway.
	Edward Burns,	American,	Laborer,	38	S.	"		" " " " "
Oct. 17	Peter Stanavage,	Lithuanian,	Loader,	40	M.	Maple Hill,		Hand injured by fall of coal.
Nov. 4	Alex Ostruski,	Lithuanian,	Driver,	34	M.	Park,		Injured by being kicked by mule at face of breast.
11	Alex Chicanovidge,	Polish,	Laborer,	34	M.	Suffolk,		Injured by fall of coal at face of breast.
15	Simon Shaddis,	Russian,	Laborer,	36	M.	Park,		Injured by prop falling on him.

Nov. 17	Michael Joseph,	Syrian,	Runner,	23	M.	Maple Hill,	Schuylkill,	Injured by mine cars.
Dec. 4	Charles Subleski,	Polish,	Miner,	24	S.	Hillsgrown,		Injured by fall of slate at face of breast.
15	William McCarthy,	American,	Dumpman,	35	S.	Tunnel Ridge,		Injured by cars while coupling them.
18	George Sadofsky,	Lithuanian,	Miner,	42	M.	Tunnel Ridge,		Injured by fall of coal at face of gangway.
21	Joe Ryan,	Polish,	Miner,	37	M.	Maple Hill,		Injured by fall of slate at face of gangway.

CONDITION OF COLLIERIES

PHILADELPHIA AND READING COAL AND IRON COMPANY

Ellangowan, Saint Nicholas, Suffolk, Maple Hill, Tunnel Ridge, Mahanoy City, North Mahanoy, and Knickerbocker Collieries—Ventilation, drainage and condition as to safety, good.

LEHIGH VALLEY COAL COMPANY

Park.—Ventilation, drainage and condition as to safety, good.

IMPROVEMENTS

PHILADELPHIA AND READING COAL AND IRON COMPANY

Ellangowan Colliery.—A steam saw for cutting timber was installed on timber yard.

Saint Nicholas Colliery.—A tunnel to Buck Mountain vein, North dip, from West Buck Mountain gangway, 4th lift, south dip, was completed; total length 115 2-3 yards.

An electric dump car was installed at head of dirt plane to handle refuse from breaker.

Suffolk Colliery.—An electric hoist for slope in Holmes vein near the end of Holmes stripping was installed.

A tunnel to Diamond basin from West Orchard gangway 1st lift at breast No. 76, was completed; total length 44 2-3 yards.

Maple Hill Colliery.—A rock crusher operated electrically was installed near breaker.

A tunnel to Top and Middle Split veins, north dip, from No. 7 plane East Bottom Split gangway, north dip, at breast No. 26, was completed; total length 39 2-3 yards.

Mahanoy City Colliery.—A tunnel to Holmes vein from Primrose vein, off 1st lift Primrose slope, was completed; total length 66 2-3 yards.

A tunnel to Skidmore vein, north dip, from West Bottom Split gangway No. 10 tunnel 3rd lift, north dip, at breast No. 48, was completed; total length 26 1-3 yards.

A spray system was installed in breaker for fire protection; and a concrete reservoir was built for breaker wash water.

North Mahanoy Colliery.—A steam saw for cutting timber was installed on timber yard.

The No. 5 underground slope in Buck Mountain vein below the 8th level, Schuylkill Section, was completed, and an electric pump installed at foot of slope.

A 10-inch bore hole was drilled for rope, 427 feet deep, and a pair of 24 by 48-inch engines, with house, was erected to operate above slope.

LEHIGH VALLEY COAL COMPANY

Park Colliery.—Inside: A tunnel was driven from the Mammoth Top Split, north dip, No. 1 slope, to the Mammoth Bottom Split, north dip; total length, 30 yards.

A rock hole was driven from the 2nd level West Skidmore, south dip, No. 7 slope, to the basin of the Skidmore vein; total length 35 yards.

A 23 by 25-foot tile building was erected for a sub-station, and a 200 K. W. motor generator set was installed on Primrose slope.

Outside: A 40 by 70-foot rugged tile building was erected and will be used for carpenter and blacksmith shop.

A 4-inch Universal pipe line was constructed from Park No. 3 to Park No. 4; total length 2,666 2-3 yards.

Four Wilimot jigs were installed in the breaker.

54,022 cubic yards of cover were removed from the Buck Mountain vein, north dip stripping, which completed it, making a total of 513,271 cubic yards removed.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held at Mahanoy City, June 6 and 7. The Board of Examiners was composed of P. C. Fenton, Mine Inspector, Mahanoy City; T. R. Jones, Superintendent, Park Place; William Becker, Miner, Mahanoy City; Idris Davis, Miner, Mahanoy City.

The following persons passed a satisfactory examination and were granted certificates:

MINE FOREMEN

John Maher, George Schad, William Llewellyn, Michael Kelly, Theodore Walton, James Davis, William Jones, John S. Scanlin, Mahanoy City; Thomas Kutskill, Shenandoah.

ASSISTANT MINE FOREMEN

Thomas F. Carr, Edward G. Nolter, James Scanlon, John Nolter, Roy Horgen, Joseph Maher, Joseph Casperavage, John Craig, Mahanoy City; William E. VanHorn, Park Place.

TWENTY-FIRST DISTRICT

SCHUYLKILL COUNTY

Shenandoah, February 20, 1917.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: In compliance with the Anthracite Mining Laws, I transmit herewith my annual report for the Twenty-first Anthracite District for the year ending December 31, 1916.

Respectfully submitted,

A. B. LAMB,
Inspector.

SUMMARY OF STATISTICS

Number of collieries,	14
Number of mines,	28
Number of mines in operation,	28
Number of gaseous mines in operation,	14
Number of non-gaseous mines in operation	14
Number of tons of coal shipped to market,	3,336,493
Number of tons used at mines for steam and heat,	475,389
Number of tons sold to local trade and used by employes,	77,823
Number of tons produced,	3,919,05
Number of tons produced by compressed air machines,	
Number of tons produced by electrical machines,	
Number of persons employed inside of mines,	4,518
Number of persons employed outside,	2,558
Number of persons employed inside between 16 and 21 years,	297
Number of persons employed outside between 14 and 21 years,	751
Number of fatal accidents inside,	17
Number of fatal accidents outside,	6
Number of non-fatal accidents inside,	38
Number of non-fatal accidents outside,	7
Number of tons of coal produced per fatal accident inside,	230,571
Number of tons produced per fatal accident inside and outside,	170,422
Number of persons employed per fatal accident inside,	266
Number of persons employed per fatal accident outside,	426
Number of persons employed per fatal accident inside and outside,	308
Number of persons employed per non-fatal accident inside,	119
Number of persons employed per non-fatal accident outside,	365
Number of persons employed per non-fatal accident inside and outside,	157
Number of wives made widows,	10
Number of children made orphans,	24
Number of steam locomotives inside,	
Number of steam locomotives outside,	56
Number of compressed air locomotives inside,	11
Number of compressed air locomotives outside,	
Number of electric motors inside,	24
Number of electric motors outside,	4
Number of gasoline locomotives inside,	
Number of gasoline locomotives outside,	
Number of cylindrical boilers,	5
Number of tubular boilers,	156
Number of steam engines of all classes,	317

Number of internal combustion engines (gas),	.....
Number of electric dynamos,	7
Number of pumps of all classes,	126
Number of pumps delivering water to surface,	26
Number of air compressors,	13
Number of fans in use,	24
Number of new mines opened,	.....
Number of old mines abandoned,	.....

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Philadelphia and Reading Coal and Iron Company, ...	1,502,787
Lehigh Valley Coal Company, ...	901,219
Locust Mountain Coal Company, ...	490,549
Thomas Colliery Company, ...	451,396
Susquehanna Coal Company, ...	304,994
Girard Mammoth Coal Company, ...	149,239
H. H. Smith and Company, ...	60,421
Cambridge Coal Company, ...	59,100
Total, ...	3,919,705

Production by Counties

Schuylkill, ...	3,919,705

TABLE B.—Fatal and non-fatal accidents inside and outside of mines, number of tons of coal produced per accident, number of persons employed, number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Total number of employes	Number of employes inside per fatal accident	Number of employes outside per fatal accident	Number of employes inside per non-fatal accident	Number of employes outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Philadelphia and Reading Coal and Iron Co.,	8	1	9	16	1	17	187,848	93,924	2,228	1,042	3,270	278	1,042	139	1,042
Lehigh Valley Coal Co.,	3	1	4	14	2	16	300,406	64,373	1,162	446	1,608	387	446	83	223
Locust Mountain Coal Co.,	2	3	5	2	4	6	245,274	245,274	501	295	796	250	98	250	74
Thomas Colliery Co.,	2	1	3	3		3	225,698	150,465	215	252	467	107	252	72	
Susquehanna Coal Co.,	1		1	3		3	304,994	101,665	344	189	533	344		115	
Girard Mammoth Coal Co.,	1					1	149,239		68	216	284	68			
Miscellaneous companies,										118	118				
Totals and averages,	17	6	23	38	7	45	230,571	103,150	4,518	2,658	7,076	266	426	119	565

TABLE C.—Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,						1					1		2	11.77
Falls of slate,			1						1				2	11.77
Falls of roof,									1				1	5.88
Mine cars,	1		1				1	1	2				6	35.30
Blasts, premature and otherwise,							1						1	5.88
Crushed at batteries,								1					1	5.88
Rush of rock,									1				1	5.88
Struck by axe,	1												1	5.88
Struck by piece of coal,												1	1	5.88
Ruptured while lifting timber,				1									1	5.88
Totals,	2		2	1		1	2	2	5		1	1	17	100.00
Outside														
Cars,			1						1	1			3	50.00
Machinery,										1			1	16.67
Explosions of powder,				1									1	16.67
Fall of earth,		1											1	16.66
Totals,		1	1	1					1	2			6	100.00
Grand totals,	2	1	3	2		1	2	2	6	2	1	1	23	

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,	2	1	1									1	5	13.16
Falls of roof,	1		1			1	1						4	10.53
Mine cars,	1	1		1		1		3	1		1	1	10	26.32
Explosions of gas,										2	1		3	7.90
Explosions of powder and dynamite,						1							1	2.63
Blasts, premature and otherwise,					1						1		2	5.26
Falling into slopes, etc.,		1					1						2	5.26
Machinery,		1											1	2.63
Struck by spike,										1			1	2.63
Struck by iron pipe,						1							1	2.63
Struck by piece of iron,			1										1	2.63
Struck by force of air,									1				1	2.63
Struck by timber,		1			1						1		3	7.90
Stepped on nail,										1			1	2.63
Rush of coal,		1											1	2.63
Falling,										1			1	2.63
Totals,	4	6	3	1	2	4	2	3	2	5	4	2	38	100.00
Outside														
Cars,				1		1							2	28.57
Squeezed by clamp,											1		1	14.29
Explosions of carbide,			2										2	28.57
Struck by piece of coal,											1		1	14.29
Struck by timber,											1		1	14.28
Totals,			2	1		1					3		7	100.00
Grand totals,	4	6	5	2	2	5	2	3	2	5	7	2	45	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,							1	1	3		1	1	7
Miners' laborers,	1		1	1		1	1						5
Drivers and runners,	1							1					2
Bottommen,									1				1
Chargemen,									1				1
Motormen and assistants,			1										1
Totals,	2		2	1		1	2	2	5		1	1	17
Outside													
Jig runners,										1			1
Laborers,		1	1	1					1	1			5
Totals,		1	1	1					1	2			6
Grand totals,	2	1	3	2		1	2	2	6	2	1	1	23

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Fire bosses,								1					1
Miners,	3	3	2		2	2	1			3	3		19
Miners' Laborers,	1	2		1		1	1		1		1	1	9
Drivers and runners,		1				1		1	1	1			5
Motormen and assistants,												1	1
Trackmen and bratticemen,								1		1			2
Pumpmen and pipemen,			1										1
Totals,	4	6	3	1	2	4	2	3	2	5	4	2	38
Outside													
Foremen,			1										1
Blacksmiths and carpenters,			1										1
Laborers,				1		1					3		5
Totals,			2	1		1					3		7
Grand totals,	4	6	5	2	2	5	2	3	2	5	7	2	45

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,			1			1			2	1			5
English,									1				1
Polish,	1	1					1	2	1	1			7
Italian,				1			1		1				3
Lithuanian,	1		1	1					1		1	1	6
Austrian,			1										1
Totals,	2	1	3	2		1	2	2	6	2	1	1	23

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	1		1	1		1		1	2	2	1	1	11
Welsh,			1	1				1					3
Irish,		1											1
German,			1										1
Polish,	1	2			2					1	1	1	8
Italian,						1							1
Lithuanian,	1	2	2			2	2			1	4		14
Russian,	1									1			2
Greek,		1						1			1		3
Syrian,						1							1
Totals,	4	6	5	2	2	5	2	3	2	5	7	2	45

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and types of safety lamps used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Philadelphia and Reading Coal and Iron Co.										
Indian Ridge Colliery:										
Indian Ridge,	Schuylkill,			311				Gaseous,	35	184
Indian Ridge,					565	10		Non-gas.,		
Indian Ridge,					960	23		Non-gas.,		
West Shenandoah Colliery:										
West Shenandoah,	Schuylkill,				1,812	18		Gaseous,	311	330
Kohinoor Colliery:										
Kohinoor,	Schuylkill,			495				Gaseous,	109	117
Turkey Run Colliery:										
Turkey Run,							Drift,	Gaseous,	106	460
Turkey Run,					1,475	8		Non-gas.,		
Turkey Run,	Schuylkill,				1,717	15		Gaseous,		
Turkey Run,							Drift,	Non-gas.,		
Turkey Run,					393	14		Non-gas.,		
Shenandoah City Colliery:										
Shenandoah City,	Schuylkill,			445				Gaseous,	377	398
Hammond Colliery:										
Hammond,				1,211		39		Gaseous,	529	120
Hammond,	Schuylkill,				1,471					
Hammond,					1,197	33		Non-gas.,		

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening: Shaft — Depth	Slope (Coal or Rock) — Length	Slope (Coal or Rock) — Average pitch—degrees	Drift	Gaseous or non-gaseous	Number and types of safety lamps used: Flame	Electric
Lehigh Valley Coal Co.										
Packer No. 2 Colliery:										
		Diamond,	114							
		Orchard,	110							
		Little Orchard,	120							
		Primrose,	133							
		Holmes,	170							
Packer No. 2,	Schuylkill,	Mammoth,	360		1,610	38		Gaseous,	140	
		Mammoth Top Split,	152							
		Skidmore,	32							
		Seven Foot,	42							
		Buck Mountain,	110							
		Little Buck Mountain	54							
Packer No. 3 Colliery:										
		Holmes,	120							
		Mammoth,	467							
Packer No. 3,	Schuylkill,	Skidmore,	48		1,150	35		Gaseous,	130	
		Seven Foot,	106							
		Buck Mountain,	110							
		Little Buck Mountain	46							
Packer No. 4 Colliery:										
		Orchard,	151							
		Primrose,	154							
		Little Primrose,,	36							
		Holmes,	118							
Packer No. 4,	Schuylkill,	Four Foot,	49		820	25		Gaseous,	75	

		Mammoth,	480							
		Seven Foot,	88							
		Buck Mountain,	123							
		Little Buck Mountain	12							
Packer No. 5 Colliery:										
		Diamond,	91							
		Little Orchard,	103							
		Orchard,	123							
		Primrose,	36							
Packer No. 5,	Schuylkill,	Holmes,	143	593				Gaseous,	430	
		Mammoth Top Split,	143							
		Mammoth,	265							
		Seven Foot,	88							
		Buck Mountain,	104							
		Little Buck Mountain	58							
Locust Mountain Coal Co.										
Weston Colliery:										
		Mammoth,	240							
		Buck Mountain,	120							
Weston,	Schuylkill,	Skidmore,	69				Tunnel,	Non-gas.,	5	
		Seven Foot,	102							
		Little Buck Mountain	54							
Thoms Colliery Co.										
Kehley Run Colliery:										
		Mammoth,	360							
		Skidmore,	36							
Kehley Run,	Schuylkill,	Seven Foot,	60		602	47		Gaseous,	12	
		Buck Mountain,	114							
		Little Buck Mountain	33							
Kehley Run No. 3,	Schuylkill,	Buck Mountain,	114		706	35		Gaseous,	4	
Susquehanna Coal Co.										
William Penn Colliery:										
		Little Orchard,	72							
		Orchard,	120							
		Primrose,	192							
William Penn,		Holmes,	120	900				Non-gas.,	125	
William Penn,	Schuylkill,	Four Foot,	48		1,500				35	
William Penn,		Top Split,	144				Drift,	Non-gas.,		
William Penn,		Mammoth,	360					Non-gas.,		
		Skidmore,	48							
		Seven Foot,	24							
		Buck Mountain,	120							
		Little Buck Mountain	60							
Girard Mammoth Coal Co.										
Girard Mammoth Colliery:										
Girard Mammoth,		Mammoth,	600		600	15				
Girard Mammoth,	Schuylkill,	Buck Mountain,	216		212	8		Non-gas.,		
Girard Mammoth,		Buck Mountain,	216				Drift,			

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Philadelphia and Reading Coal and Iron Co.												
Indian Ridge Colliery:												
Indian Ridge,	Schuylkill,		Guibal,	15	80	1.	Steam,	121,366	122,141	61,887	7	359
Indian Ridge,				18	75	1.1						
Indian Ridge,			Guibal,	12	35	1.1	Steam,	18,172	20,334	15,191	1	
Indian Ridge,			Guibal,	12	65	.2	Steam,	18,360	18,920	10,734	3	
West Shenandoah Colliery:												
West Shenandoah,	Schuylkill,		Guibal,	18	70	1.	Steam,	122,400	145,658	80,398	18	388
				21	90	3.						
Kohinoor Colliery:												
Kohinoor,	Schuylkill,		Guibal,	18	75	1.4	Steam,	59,069	61,800	38,559	8	139
Turkey Run Colliery:												
Turkey Run,	Schuylkill,		Guibal,	21	90	3.	Steam,	89,560	92,030	44,540	20	414
Turkey Run,												
Turkey Run,			Guibal,	8	180	.8	Electricity,	48,760	54,530	36,100	10	
Turkey Run,			Guibal,	8	120	.3	Steam,	2,840	2,980	1,260	2	
Turkey Run,												
Shenandoah City Colliery:												
Shenandoah City,	Schuylkill,		Guibal,	21	80	.2	Steam,	205,951	207,509	140,585	26	506
Hammond Colliery:												
Hammond,	Schuylkill,		Guibal,	21	60	.5	Steam,	46,840	47,400	26,960	15	409
Hammond,												
Hammond,			Guibal,	85	22	2.2	Steam,	76,100	78,000	33,200	12	

Lehigh Valley Coal Co.													
Packer No. 2 Colliery:													
Packer No. 2,	Schuylkill,	Diamond, Orchard, Little Orchard, Primrose, Holmes, Mammoth, Mammoth Top Split, Skidmore, Seven Foot, Buck Mountain, Little Buck Mountain	Guibal,	20	70	1.	Steam,	85,000	85,000		6	201	
Packer No. 3 Colliery:													
Packer No. 3,	Schuylkill,	Holmes, Mammoth, Skidmore, Seven Foot, Buck Mountain, Little Buck Mountain	Guibal,	18	70	.6	Steam,	85,000	85,000		10	118	
Packer No. 4 Colliery:													
Packer No. 4,	Schuylkill,	Orchard, Primrose, Little Primrose,, Holmes, Four Foot, Mammoth, Seven Foot, Buck Mountain, Little Buck Mountain	Guibal,	20	62	1.	Steam,	91,000	91,000		7	191	
Packer No. 5 Colliery:													
Packer No. 5,	Schuylkill,	Diamond, Little Orchard, Orchard, Primrose, Holmes, Mammoth Top Split, Mammoth, Seven Foot, Buck Mountain, Little Buck Mountain	Guibal,	18	90	2.1	Steam,	104,000	104,000		22	416	
Locust Mountain Coal Co.													
Weston Colliery:													
Weston,	Schuylkill,	Mammoth, Buck Mountain, Skidmore, Seven Foot, Little Buck Mountain	Stine,	5.1	580	1.	Electricity,	50,000	55,000	50,000	2	398	

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Thomas Colliery Co.												
Kehley Run Colliery:												
Kehley Run,	Schuylkill,	Mammoth, Skidmore, Seven Foot, Buck Mountain, Little Buck Mountain	Guibal,	16	120	1.5	Steam,	120,000	130,000	8,000	10	180
Kehley Run No. 3,	Schuylkill,	Buck Mountain,	Blackman	8	150	1.6	Steam,	15,000	16,500	7,000	2	17
Susquehanna Coal Co.												
William Penn Colliery:												
William Penn,	Schuylkill,	Little Orchard, Orchard, Primrose, Holmes,	Guibal,	18	105	1.8	Steam,	60,000	64,000	46,000	4	344
William Penn,		Four Foot,										
William Penn,		Top Split,	Guibal,	18	85	1.6	Steam,	39,000	62,000	30,500	4	
William Penn,		Mammoth, Skidmore, Seven Foot, Buck Mountain, Little Buck Mountain	Vulcan,	12	40	1.2	Steam,	27,000	24,000	19,000	2	
Girard Mammoth Coal Co.												
Girard Mammoth Colliery:												
Girard Mammoth,	Schuylkill,	Mammoth,	Buffalo,	8	90	.6	Steam,	40,000	40,000	40,000	4	68
Girard Mammoth,		Buck Mountain,										
Girard Mammoth,		Buck Mountain,										

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	General Superintendent	Post Office	Superintendent	Post Office	Railroad to Mine
Philadelphia and Reading Coal and Iron Co.						
Indian Ridge, West Shenandoah, Kohinoor, Turkey Run, Shenandoah City,	Schuylkill,	E. E. Kaercher,	Pottsville,	J. B. Garner, Division Supt. Louis Lorenz, Inside District Supt. A. D. Gable, Outside District Sup.	Shenandoah,	Phila. and Reading
Hammond,	Schuylkill,	G. B. Hadesty,	Pottsville,	Morgan Bevan,	Ashland,	
Plank Ridge Washery,		E. E. Kaercher,	Pottsville,	A. D. Gable,	Shenandoah,	
Lehigh Valley Coal Co.						
Packer Nos. 2, 3, 4, 5,	Schuylkill,	Thomas Thomas,	Wilkes-Barre,	H. J. Heffner,	Centralia,	Lehigh Valley
Locust Mountain Coal Co.						
Weston,	Schuylkill,	T. M. Dodson,	Shenandoah,	B. H. Stockett,	Shenandoah,	L. V. and P. and R.
Thomas Colliery Co.						
Kehley Run, Black Creek Washery,	Schuylkill,	W. G. Thomas,	Frackville,	John Price,	Shenandoah,	L. V. and P. and R.
Susquehanna Coal Co.						
William Penn,	Schuylkill,	Robert A. Quin,	Wilkes-Barre,	W. W. Williams,	Shaft,	Pennsylvania
Girard Mammoth Coal Co.						
Girard Mammoth,	Schuylkill,	Timothy Cockill,	Mahanoy City,	Timothy Cockill,	Mahanoy City,	Phila. and Reading.
H. H. Smith and Co.						
Hudson Washery,	Schuylkill,	H. H. Lineaweaver,	Philadelphia,	Godfrey Laudeman,	Pottsville,	Phila. and Reading.
Cambridge Coal Co.						
Cambridge Washery,	Schuylkill,	B. F. James,	Shenandoah,	B. F. James,	Shenandoah,	Phila. and Reading.

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives: Pounds of black powder used	Explosives: Pounds of dynamite used	Explosives: Pounds of permissible explosives used.
Philadelphia and Reading Coal and Iron Co.												
Indian Ridge,	Schuylkill,	166,072	25,883		191,955	269	413	2		23,975	63,249	
West Shenandoah,		502,034	64,792		566,826		624	1	3	7,000	34,031	17,425
Kohinoor,			10,437		10,437	273	165			4,875	20,799	12
Turkey Run,							511	2	3	13,925	42,580	
Shenandoah City,		209,006	44,523	39,922	293,451	294	845	1	9	19,550	40,199	24,188
Hammond,		279,838	66,894	23,617	370,349	269	646	3	2		85,375	69,256
Plank Ridge Washery,		62,535	7,234		69,769	258	66					
Totals,		1,219,485	219,763	63,539	1,502,787		3,270	9	17	69,325	286,236	110,881
Lehigh Valley Coal Co.												
Packer No. 2,	Schuylkill,	170,255	15,742		185,997		270	1	2	1,725	90,953	
Packer No. 3,		113,008	55		113,063	277	194		2	3,475	34,640	
Packer No. 4,		116,081	85,799	1,340	203,220		405	1	4	3,425	68,107	
Packer No. 5,		348,851	50,088		398,939	246	739	2	8	3,500	204,429	
Totals,		748,195	151,684	1,340	901,219		1,608	4	16	12,125	398,129	
Locust Mountain Coal Co.												
Weston,	Schuylkill,	486,188	3,752	609	490,549	249	796	5	6	126,725	279,387	

Thomas Colliery Co.												
Kehley Run,	Schuylkill,	206,275	18,460	8,278	233,013	258	378	3	3	53,775	39,644	
Black Creek Washery,		211,116	7,267		218,383	248	89					
Totals,		417,391	25,727	8,278	451,396		467	3	3	53,775	39,644	
Susquehanna Coal Co.												
William Penn,	Schuylkill,	265,751	36,699	2,553	304,994	244	533	1	3	7,075	97,785	2,425
Girard Mammoth Coal Co.												
Girard Mammoth,	Schuylkill,	117,715	30,150	1,374	149,239	273	284	1		12,625	20,065	5,121
H. H. Smith and Co.												
Hudson Washery,	Schuylkill,	57,810	2,611		60,421	116	43					
Cambridge Coal Co.												
Cambridge Washery,	Schuylkill,	53,958	5,012	130	59,100	281	75					
Grand totals,		3,366,493	475,389	77,823	3,918,705		7,076	23	45	281,650	1,121,246	118,427

TABLE 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Names of Operators	County	Power Plant: Boilers: Cylindrical: Number	Cylindrical: Total horse power	Tubular: Number	Tubular: Total horse power	Engines: Steam Engines (All Classes): Number	Steam Engines: Total horse power	Internal Combustion Engines (Gas): Number	Internal Combustion Engines: Total horse power	Electric Dynamos (All Classes): Number	Electric Dynamos: Total watts	Pumps: Number	Total capacity in gallons per minute	Pumps Delivering Water to the Surface: Number	Approximate number of gallons per minute	Haulage: Number of horses and mules	Locomotives: Gasoline	Steam	Air	Electric	Air Compressors: Number	Total capacity cubic feet per minute
Philadelphia and Reading Coal and Iron Co.,	Schuylkill,			17	9,950	175	20,524			4	780	75	60,667	16	5,534	205		11	11	6	9	7,601
Lehigh Valley Coal Co.,				30	6,400	69	7,968			2	450	16	14,600	3	6,500	67		6		15		
Locust Mountain Coal Co.,						17	695					22	870					14		4	2	1,200
Thomas Colliery Co.,		5	175			17	2,188					5	5,000	2	4,000	36		9			1	1,000
Susquehanna Coal Co.,				18	2,700	17	2,188									57		1			1	1,600
Girard Mammoth Coal Co.,				15	2,300	16	1,500			1	120	6	6,100	5	6,000	18		13		3		
H. H. Smith and Co.,				8	1,600	8	900					2	2,000									
Cambridge Coal Co.,				4	500	7	244									3		2				
				4	500	8	400															
Totals,		5	175	156	23,950	317	34,419			7	1,300	126	89,237	26	22,034	386		56	11	28	13	11,401

TABLE 3.—Part 1.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside																			Outside										Total outside	Grand total inside and outside
		Mine foremen	Assistant mine foremen	Fire bosses	Miners	Miners' laborers	Machine miners	Machine runners and scrapers	Drivers and runners	Motormen and assistants	Doorboys and helpers	Trackmen and bratticemen	Timbermen and rockmen	Pumpmen and pipemen	Electricians and helpers	All other employes	Total inside	Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Machinists and helpers	Trackmen and helpers	Slate pickers (boys)	Slate pickers (men)	Office employes	All other employes					
Philadelphia and Reading Coal and Iron Co.,	Schuylkill,	6	53	----	598	666	----	----	109	4	23	100	163	18	----	488	2,228	--	5	51	156	7	12	108	63	25	615	1,042	3,270			
Lehigh Valley Coal Co.,		6	33	----	486	231	----	----	27	36	21	43	47	11	1	220	1,162	1	6	43	71	8	10	32	----	7	268	446	1,608			
Locust Mountain Coal Co.,		6	5	----	143	200	----	----	8	12	5	34	4	----	8	76	501	1	----	43	39	7	----	56	----	7	142	295	796			
Thomas Colliery Co.,		1	2	4	117	26	----	----	9	----	3	----	----	4	----	19	215	1	3	15	36	2	4	38	6	3	144	252	467			
Susquehanna Coal Co.,		1	1	10	133	65	----	----	34	----	18	----	----	9	----	73	344	1	1	22	26	----	----	16	19	8	96	189	533			
Girard Mammoth Coal Co.,		1	.	.	14	20	----	----	9	5	----	2	8	4	----	5	68	1	1	9	37	4	5	27	3	2	127	216	284			
H. H. Smith and Co.,		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	1	2	6	----	----	2	2	1	28	43	43			
Cambridge Coal Co.,		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	2	4	8	----	----	15	----	----	46	75	75			
Totals,		21	94	14	1,491	1,208	----	----	196	57	70	179	222	46	9	911	4,518	6	19	189	379	28	31	294	93	53	1,466	2,558	7,076			

TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Total
Philadelphia and Reading Coal and Iron Co.,	Schuylkill,	23	22	25	18	25	24	24	25	24	25	24	22	276
Lehigh Valley Coal Co.,		20	22	21	15	23	22	22	24	24	24	23	21	261
Locust Mountain Coal Co.,		21	23	17	12	12	25	22	25	24	22	24	22	249
Thomas Colliery Co.,		22	21	26	13	18	24	23	22	21	23	23	22	258
Susquehanna Coal Co.,		24	19	23	15	22	8	23	24	22	22	19	23	244
Girard Mammoth Coal Co.,		22	22	24	19	20	20	24	26	25	24	24	23	273

TABLE 4.—Fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Co y	County	Nature and Cause of Accident in Brief
Jan. 5	Steve Kroshetskie,	Polish,	Driver,	19	S.			Turkey Run,		Instantly killed. Caught between cars and timber on tunnel.
21	Joseph Muller,	Lithuanian,	Laborer,	22	S.			Indian Ridge,		Fatally injured. Struck by ax while cutting out old timber. Died January 29.
Feb. 14	Joseph Felke,	Polish,	Laborer,	39	M.	1	2	Weston,		Fatally injured. Crushed by frozen earth on stripping. Outside.
Mar. 1	Michael Cosark,	Austrian,	Laborer,	53	M.	1	2	Packer No. 4,		Fatally injured. Run over by cars. Outside.
7	Anthony Boloskie,	Lithuanian,	Laborer,	30	S.			Weston,		Instantly killed by fall of slate at face of breast.
11	Martin Doherty,	American,	Motor helper,	19	S.			Packer No. 5,		Instantly killed. Run over by motor on gangway.
April 25	Joseph Herman,	Lithuanian,	Laborer,	37	S.			Hammond,		Blood vessel in head ruptured while lifting timber. Died in hospital.
26	Nick Carrell,	Italian,	Laborer,	18	S.			Weston,		Fatally injured by explosion of powder on stripping. Outside.
June 10	Raymond McGrath,	American,	Laborer,	57	S.			Girard Mammoth,	Schuylkill,	Instantly killed by fall of coal at face of robbing.
July 15	Anthony Yabinsky,	Polish,	Miner,	42	M.	1	6	Kehley Run,		Instantly killed. Caught between cars and timber in breast.
27	James Paul,	Italian,	Laborer,	45	S.			Hammond,		Instantly killed. Struck by flying coal from a blast.
Aug. 8	Walter Pogan,	Polish,	Driver,	30	M.	1	1	Shenandoah City,		Fatally injured. Run over by cars on gangway.
17	James Possesskey,	Polish,	Miner,	45	M.	1	4	Packer No. 2,		Instantly killed by rush of coal in battery.
Sept. 5	George Wenlock,	English,	Miner,	53	M.	1	2	Turkey Run,		Instantly killed by fall of slate at face of skip.
8	Alex Shemcavage,	Polish,	Miner,	42	S.			Weston,		Instantly killed by fall of rock at face of breast.
15	John Defrehn,	American,	Bottomman,	26	S.			West Shenandoah,		Instantly killed. Caught between car and rib at foot of slope.
16	Albert Sanini,	Italian,	Chargeman,	36	M.	1	2	Packer No. 5,		Instantly killed. Run over by cars on gangway.

TABLE 4.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Sept. 19	Albert Buscavage,	Lithuanian,	Laborer,	20	S.			Kehley Run,		Instantly killed. Caught between cars. Outside.
21	James Hutton,	American,	Miner,	51	M.	1	1	William Penn,		Instantly killed by rush of rock in chute.
Oct. 10	Frank Dolosky,	Polish,	Jig runner,	16	S.			Weston,		Instantly killed. Caught in machinery. Outside.
25	Michael O'Donnell,	American,	Laborer,	32	S.			Hammond,	Schuylkill,	Fatally injured. Run over by truck. Outside.
Nov. 20	William Bolika,	Lithuanian,	Miner,	44	M.	1	4	Kehley Run,		Instantly killed by fall of coal at face of robbing.
Dec. 12	John Willmitus,	Lithuanian,	Miner,	58	M.	1		Indian Ridge,		Instantly killed. Struck by lump of coal in chute.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 18	Joseph Stukdinas,	American,	Miner,	52	M.	William Penn,	Schuylkill,	Fingers crushed. Run over by car in breast.
25	Steve Kovanick,	Russian,	Laborer,	28	M.	Weston,		Leg fractured by fall of coal at face.
28	Anthony Brebitus,	Lithuanian,	Miner,	44	M.	Hammond,		Leg fractured by fall of coal at face.
29	George Graulsaw,	Polish,	Miner,	30	M.	Turkey Run,		Leg fractured by fall of rock near face.
Feb. 3	John Polnickey,	Lithuanian,	Miner,	27	M.	Packer No. 4,		Leg fractured by rush of coal in chute.
9	Thomas Malia,	Irish,	Miner,	55	M.	Packer No. 4,		Leg fractured by fall of coal near face.
20	Enock Lockla,	Polish,	Laborer,	42	M.	Turkey Run,		Arm fractured. Struck by timber.
25	Stiney Wasneskey,	Polish,	Driver,	19	S.	Kehley Run,		Hand lacerated. Caught between car and timber on gangway.
26	John Kerzinski,	Lithuanian,	Miner,	36	M.	Packer No. 3,		Scalp lacerated by falling down rock hole.
29	Steve Dewar,	Greek,	Laborer,	36	S.	Packer No. 5,		Toe crushed. Caught by apparatus to to hold car on cage.
Mar. 6	John Sankus,	Lithuanian,	Miner,	28	S.	Hammond,		Foot bruised and head cut by fall of coal near face.
16	Ralph Walters,	Welsh,	Blacksmith helper,	23	M.	Weston,		Nose broken and scalp lacerated by explosion of carbide generator. Outside.
	Benj. Lauderman,	German,	Foreman,	30	S.	Kehley Run,		Arm fractured and scalp lacerated.
21	Raymond Graff,	American,	Pumpman,	23	S.	Kehley Run,		Eye lacerated. Struck by piece of iron.
28	Matt Zurkus,	Lithuanian,	Miner,	46	S.	Packer No. 2,		Collar bone fractured, scalp lacerated and nose injured by fall of rock near face.
April 5	Charles Miller,	American,	Laborer,	19	S.	Weston,		Finger fractured by mine car.
29	Jacob Bergens,	Welsh,	Laborer,	32	S.	Shenandoah City,		Finger fractured and hand lacerated. Caught between door of dumper. Outside.
May 6	Dominick Metsavage,	Polish,	Miner,	24	S.	Shenandoah City,		Leg fractured. Struck by timber.
18	George Dudick,	Polish,	Miner,	29	M.	Packer No. 5,		Head, breast and arms lacerated by explosion of blast.
June 16	Barney Slackus,	Lithuanian,	Miner,	29	M.	Packer No. 5,		Thumb and finger blown off by explosion of dynamite cap.
17	Peter Sicilian,	Italian,	Laborer,	55	M.	Packer No. 5,		Nose fractured. Struck by mine car. Outside.
	Sylvester Kolkoskie,	Lithuanian,	Miner,	40	M.	Packer No. 5,		Leg fractured. Struck by iron pipe.

TABLE 5.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
June 17	Michael Creshock,	American,	Laborer,	20	S.	Packer No. 4,		Leg fractured. Caught between cars
22	Elias Nahas,	Syrian,	Driver,	19	S.	Shenandoah City,		Arm bruised by fall of rock on gangway.
July 3	Peter Grobleck,	Lithuanian,	Laborer,	20	M.	Weston,		Ankle dislocated by falling down manway.
8	Joseph Yencofsky,	Lithuanian,	Miner,	32	M.	William Penn,		Hip dislocated and arm fractured by fall of rock away from face.
Aug. 4	Samuel Evans,	Welsh,	Repairman,	37	S.	Shenandoah City,		Leg fractured. Caught between lokie and car on gangway.
	John Havercheck,	Greek,	Driver,	28	S.	Shenandoah City,		Injured internally. Caught between car and timber on gangway.
31	Charles Whitmager,	American,	Assistant foreman,	35	M.	Packer No. 5,		Foot cut off. Caught between lokie and cars on gangway.
Sept. 7	John Toomey,	American,	Laborer,	21	M.	Shenandoah City,		Collar bone fractured. Struck by force of air.
15	Henry Peters,	American,	Driver,	30	M.	William Penn,		Ankle fractured and scalp lacerated. Run over by cars.
Oct. 1	William Flaherty,	American,	Miner,	62	M.	Turkey Run,	Schuylkill,	Eye injured. Struck by spike.
4	Joseph Yanchules,	Lithuanian,	Runner,	19	S.	Shenandoah City,		Foot injured by stepping on nail.
9	M. F. Coyle,	American,	Trackman,	40	M.	Packer No. 4,		Arm fractured by falling on track.
18	Hipolite Covolovitch,	Polish,	Miner,	40	S.	West Shenandoah,		Hands and face burned by explosion of gas.
	Charles Radazavatz,	Russian,	Miner,	36	M.	Packer No. 5,		Head, face and arms burned by explosion of gas.
Nov. 7	Stiney Faliskie,	Polish,	Laborer,	60	M.	West Shenandoah,		Leg fractured. Struck by timber. Outside.
9	John Shopple,	Lithuanian,	Laborer,	18	S.	Weston,		Finger crushed. Squeezed by clamp. Outside.
10	Stiney Buckkitus,	Lithuanian,	Miner,	41	S.	West Shenandoah,		Hands and face burned by explosion of gas.
14	Bolick Aftook,	Lithuanian,	Miner,	36	S.	Packer No. 3,		Finger crushed. Struck by timber.
17	John Barrett,	American,	Laborer,	48	M.	Packer No. 5,		Leg fractured. Struck by piece of coal on stripping. Outside.

	20	William Korneskie, --	Greek,------	Laborer, ----------	29	S.	Shenandoah City, --------	Schuylkill,	Jaw fractured. Caught between car and timber on gangway.
	21	Felix Neleziko, ------	Lithuanian,	Miner, ----------	26	S.	Shenandoah City, --------		Head, face and eyes injured by explosion of blast.
Dec.	11	George Petroskie, --	American,--	Motor helpers, ----	20	S.	Packer No. 5, ----------		Hand crushed. Caught between motor and car.
	21	John Zuitch, --------	Polish, ----	Laborer, ----------	34	M.	Packer No. 2, ----------		Arm fractured by fall of coal at face.

CONDITION OF COLLIERIES

PHILADELPHIA AND READING COAL AND IRON COMPANY

Indian Ridge, West Shenandoah, Kohinoor, Turkey Run, Shenandoah City and Hammond Collieries.—Ventilation, drainage and condition as to safety, good.

LEHIGH VALLEY COAL COMPANY

Packer Nos. 2, 3, 4 and 5 Collieries.—Ventilation, drainage and condition as to safety, good.

LOCUST MOUNTAIN COAL COMPANY

Weston Colliery.—Ventilation and condition as to safety, good. Drainage fair.

THOMAS COLLIERY COMPANY

Kehley Run Colliery.—Ventilation and condition as to safety, good. Drainage fair.

SUSQUEHANNA COAL COMPANY

William Penn Colliery.—Ventilation, drainage and condition as to safety, good.

GIRARD MAMMOTH COAL COMPANY

Girard Mammoth Colliery.—Ventilation and condition as to safety, good. Drainage fair.

IMPROVEMENTS

PHILADELPHIA AND READING COAL AND IRON COMPANY

Indian Ridge Colliery.—127,307 cubic yards of slush were run into the mine during the year, making 1,560,525 cubic yards to date. Signal system for mine car track between culm bank and Plank Ridge washery has been installed.

West Shenandoah Colliery.—21,401 cubic yards of slush were run into the mines during the year, making 733,817 cubic yards to date. Drove traffic tunnel from Seven Foot to Bottom Split, 5th lift, length 60 feet. Drove air tunnel from Seven Foot to Bottom Split, 5th lift, length 63 feet. Drove mule-way in Buck Mountain vein from 6th lift to 5th lift. Built saw-mill for cutting mine timber. Laid a 12-inch terra cotta pipe line 600 feet long to convey mine water from Kohinoor to wash-water dam. Erected charging station for electric lamps. Installed spraying system in breaker for fire protection.

Kohinoor Colliery.—36,208 cubic yards of slush were run into the mine during the year, making 1,155,368 cubic yards to date.

Turkey Run Colliery.—Drove tunnel from Holmes to Four Foot No. 8 slope, 8th lift, length 46 feet. Laid backswitch landing and erected head-frame at No. 5 slope. Drove No. 11 slope in basin of Little Primrose vein, length 393 feet.

Shenandoah City Colliery.—13,055 cubic yards of slush were run into the mine during the year, making 83,421 cubic yards to date. Drove tunnel from Skidmore to Bottom Split, old level, length 63 feet. Drove traffic tunnel from Skidmore to Seven Foot, No. 1 Buck slope, 2nd lift, length 56 feet. Erected rock bin and scraper line for handling breaker refuse. Erected two 15,000 gallon water tanks near breaker. Built saw-mill for cutting mine timber.

LEHIGH VALLEY COAL COMPANY

Packer No. 2 Colliery.—Drove the following tunnels: Little Orchard to Diamond vein, 2nd level, length 184 feet; Skidmore to Buck Mountain, 5th level, length 177 feet; Packer No. 2 to Packer No. 3, 4th level, length 24 feet. Drove rock hole from Orchard to Little Orchard, 3rd level, length 75 feet. Erected hospital on the surface.

Packer No. 3 Colliery.—Concreted mouth of Mammoth tender slope and mouth of steam and culm way. Drove tunnel from Skidmore to Seven Foot, 3rd level, length 121 feet.

Packer No. 4 Colliery.——Drove the following tunnels: Mammoth to Holmes, west 3rd level, length 232 feet; Mammoth to Holmes, east 3rd level, length 97 feet; Four Foot to Primrose, 2nd level, length 285 feet; Packer No. 4, Buck Mountain to No. 3 Skidmore, length 73 feet; Buck Mountain to Skidmore, 3rd level, length 310 feet. Erected engine-house on the Mammoth slope for the purpose of hoisting gum boats. Built steel conveyor line from main slope trestle to breaker, length 280 feet. Installed 8 shakers in breaker.

Packer No. 5 Colliery.—Drove the following tunnels: Little Orchard to Diamond No. 2 level; Seven Foot to Mammoth No. 2 level; Seven Foot to Mammoth. Drove the following rock holes: Seven Foot to Mammoth below water level; Buck Mountain to Seven Foot below water level; Seven Foot to Mammoth off No. 47 breast, east Seven Foot, No. 1 level; Seven Foot to Mammoth opposite No. 46 breast, east Seven Foot water level; Orchard to Little Orchard No. 80 counter; Little Orchard No. 1 level to surface; Orchard to Little Orchard No. 1 level. Installed blast fan and erected heater house at the boiler plant. Replaced wooden roof on the shaft engine-house with steel roof.

LOCUST MOUNTAIN COAL COMPANY

Weston Colliery.—Installed 2 additional 8-ton locomotives for haulage.

Extended East No. 1 tunnel 140 feet, connecting the north dip, Little Buck and North Buck Mountain in west basin.

Extended East No. 2 tunnel 100 feet, connecting north dip and Little Buck.

Extended East No. 3 tunnel 100 feet, connecting Buck Mountain, north dip, and Little Buck Mountain.

Extended No. 1 tunnel 440 feet, connecting north dip, Little Buck Mountain and north and south dips Buck Mountain vein.

Installed 35 B electric shovel; a set of 24 by 24 elevators to handle condemned coal; and a 6-ton electric locomotive for handling refuse from breaker.

Erected two fireproof powder-houses.

SUSQUEHANNA COAL COMPANY

William Penn Colliery.—Installed 3 sets of Draeger rescue apparatus of the mouth-breathing type.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in Shenandoah, June 6 and 7. The Board of Examiners was composed of A. B. Lamb, Mine Inspector; W. W. Williams, Superintendent, Shaft; John Mahan, Miner, Shenandoah; Peter Heimbach, Miner, Shenandoah

The following persons passed a satisfactory examination and were granted certificates:

MINE FOREMEN

Alfred J. Jones, Harry F. Lorenz, Peter J. Donovan, Shenandoah; Edward J. Barrett, William J. Delahanty, Girardville; Martin J. Sweeney, Robert Peel, Shaft; Stephen S. Harper, Mahanoy City; David J. Price, Ashland.

ASSISTANT MINE FOREMEN

Charles F. Stauffenberger, Peter Gobrick, Shenandoah; Thomas Brennan, Lost Creek.

TWENTY-SECOND DISTRICT

SCHUYLKILL, NORTHUMBERLAND AND COLUMBIA COUNTIES

The term of Inspector J. A. O'Donnell having expired December 31, 1916, the report of the operations in the Twenty-second District was compiled in the Department of Mines from data received from the operators.

SUMMARY OF STATISTICS

Number of collieries,	14
Number of mines,	28
Number of mines in operation,	28
Number of gaseous mines in operation,	27
Number of non-gaseous mines in operation,	1
Number of tons of coal shipped to market,	2,983,677
Number of tons used at mines for steam and heat,	585,915
Number of tons sold to local trade and used by employes,	50,451
Number of tons produced,	3,620,043
Number of tons produced by compressed air machines,	.....
Number of tons produced by electrical machines,	.....
Number of persons employed inside of mines,	5,341
Number of persons employed outside,	2,323
Number of persons employed inside between 16 and 21 years,	452
Number of persons employed outside between 14 and 21 years,	695
Number of fatal accidents inside,	26
Number of fatal accidents outside,	6
Number of non-fatal accidents inside,	74
Number of non-fatal accidents outside,	32
Number of tons of coal produced per fatal accident inside,	139,232
Number of tons produced per fatal accident inside and outside,	113,126
Number of persons employed per fatal accident inside,	205
Number of persons employed per fatal accident outside,	387
Number of persons employed per fatal accident inside and outside,	239
Number of persons employed per non-fatal accident inside,	72
Number of persons employed per non-fatal accident outside,	73
Number of persons employed per non-fatal accident inside and outside,	72
Number of wives made widows,	17
Number of children made orphans,	52
Number of steam locomotives inside,	.....
Number of steam locomotives outside,	44
Number of compressed air locomotives inside,	2
Number of compressed air locomotives outside,	.....
Number of electric motors inside,	27
Number of electric motors outside,	.....
Number of gasoline locomotives inside,	4
Number of gasoline locomotives outside,	.....
Number of cylindrical boilers,	15

Number of tubular boilers,	172
Number of steam engines of all classes,	351
Number of internal combustion engines (gas),	3
Number of electric dynamos,	10
Number of pumps of all classes,	146
Number of pumps delivering water to surface,	42
Number of air compressors,	22
Number of fans in use,	29
Number of new mines opened,	.....
Number of old mines abandoned,	.....

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Philadelphia and Reading Coal and Iron Company, ...	1,719,022
Lehigh Valley Coal Company, ...	928,721
Harleigh Brookwood Coal Company, ...	407,581
Midvalley Coal Company, ...	305,604
East Bear Ridge Colliery Company, ...	193,206
W. R. McTurk Coal Company, ...	65,909
Total, ...	3,620,043

Production by Counties

Schuylkill, ...	1,531,741
Columbia, ...	1,162,298
Northumberland, ...	926,004
Total, ...	3,620,043

TABLE B.—Fatal and non-fatal accidents inside and outside of mines, number of tons of coal produced per accident, number of persons employed, number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Total number of employes	Number of employes inside per fatal accident	Number of employes outside per fatal accident	Number of employes inside per non-fatal accident	Number of employes outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Philadelphia and Reading Coal and Iron Co.,	14	4	18	26	16	42	122,787	66,116	2,646	1,209	3,855	189	302	102	76
Lehigh Valley Coal Co.,	2	1	3	29	7	36	464,369	32,025	1,185	445	1,630	592	445	41	64
Harleigh Brookwood Coal Co.,	5	------	5	7	3	10	81,516	58,226	516	243	759	103	------	74	81
Midvalley Coal Co.,	------	------	------	7	2	9	------	43,658	359	161	520	------	------	51	80
East Bear Ridge Colliery Co.,	2	------	2	5	2	7	96,603	38,641	439	150	589	219	------	88	75
W. R. McTurk Coal Co.,	3	1	4	------	2	2	21,970	------	196	115	311	65	115	------	57
Totals and averages,	26	6	32	74	32	106	139,232	48,919	5,341	2,323	7,664	205	387	72	73

TABLE C.—Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,	2	----	1	----	----	----	----	----	2	1	----	----	6	23.07
Falls of slate,	----	----	----	----	----	----	1	----	----	1	----	----	2	7.69
Falls of roof,	----	1	----	1	1	----	----	----	1	----	----	----	4	15.38
Mine cars,	----	----	1	1	----	----	----	----	----	----	----	1	3	11,54
Explosions of gas,	1	----	----	----	----	1	----	----	----	----	----	----	2	7.69
Blasts, premature and otherwise,	----	----	----	1	----	2	----	----	----	----	----	1	4	15.38
Falling into slopes, etc.,	----	----	----	----	----	1	----	----	----	----	----	----	1	3.85
Crushed at batteries,	----	----	----	----	----	----	----	----	----	1	----	----	1	3.85
Struck by timber,	----	1	----	----	----	----	----	----	----	----	----	----	1	3.85
Rush of slush,	----	----	----	----	1	----	----	----	----	----	----	----	1	3.85
Rush of coal,	----	----	----	----	----	----	----	1	----	----	----	----	1	3.85
Totals,	3	2	2	3	2	4	1	1	3	3	----	2	26	100.00
Outside														
Cars,	----	----	----	----	----	2	----	----	1	----	1	1	5	83.33
Machinery,	----	----	----	----	----	----	----	1	----	----	----	----	1	16.67
Totals,	----	----	----	----	----	2	----	1	1	----	1	1	6	100.00
Grand totals,	3	2	2	3	2	6	1	2	4	3	1	3	32	----

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,	2		1	1		1			1	1		1	8	10.82
Falls of slate,		1					1						2	2.70
Falls of roof,				1			2	1		1		1	6	8.11
Mine cars,	2	3	6			1	1		2	3	1	2	21	28.38
Explosions of gas,		1	1	4	1	1				2	5		15	20.27
Explosions of powder and dynamite,	1									1			2	2.70
Blasts, premature and otherwise,	1			1									2	2.70
Machinery,				1									1	1.35
Falling down breast,											1		1	1.35
Crushed at batteries,	1								1				2	2.70
Struck by piece of steel,									1				1	1.35
Struck by timber,							1						1	1.35
Struck by guide rail,							1						1	1.35
Struck by piece of coal,					1						1	1	3	4.06
Struck by axe,			1										1	1.35
Struck by hammer,				1									1	1.35
Ruptured by lifting,	1			1									2	2.70
Falling,		3		1									4	5.41
Totals,	8	8	9	11	2	3	6	1	5	8	8	5	74	100.00
Outside														
Cars,		4	1	2					1	1		2	11	34.38
Machinery,		1	1					1	1			1	5	15.63
Struck by column pipe,									1				1	3.12
Struck by timber,								1	1				2	6.25
Struck by piece of coal,									1				1	3.12
Struck by bar,											1		1	3.12
Struck by piece of rock,		1								1	1		3	9.38
Struck by chain block,				1									1	3.13
Burned by steam,							1						1	3.12
Rush of dirt,						1							1	3.12
Falling,		1	1					1					2	5	15.63
Totals,		7	3	3		1		4	5	2	2	5	32	100.00
Grand totals,	8	15	12	14	2	4	6	5	10	10	10	10	106	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months.												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Assistant mine foremen,				1									1
Miners,	3	2		1	2	2	1	1	2	2		1	17
Miners' laborers,			1										1
Drivers and runners,			1									1	2
Motormen and assistants,									1				1
Starters,										1			1
Drillers,						1							1
Loaders,				1									1
Chargemen,						1							1
Totals,	3	2	2	3	2	4	1	1	3	3		2	26
Outside													
Slatepickers (men),												1	1
Oilers,								1					1
Drivers and runners,						1					1		2
Laborers,						1			1				2
Totals,						2		1	1		1	1	6
Grand totals,	3	2	2	3	2	6	1	2	4	3	1	3	32

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months.												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Assistant mine foremen,												1	1
Miners,	4	3	1	3	1	2	2	1	1	3	6	1	28
Miners' laborers,	2	3	3	4			1		1	3	1	3	21
Drivers and runners,			2				1		2	1	1		7
Motormen and assistants,	2		1	1					1				5
Repairmen,							1						1
Timbermen,				1			1						2
Pumpmen,				1									1
Footmen,			2	1		1				1			5
Stablemen,		1											1
Muckers,					1								1
Loaders,		1											1
Totals,	8	8	9	11	2	3	6	1	5	8	8	5	74
Outside													
Engineers and firemen,											1		1
Slatepickers (boys),			1										1
Blacksmiths and carpenters,								2	2				4
Machinists,												1	1
Sawyers,								1					1
Ashmen,								1					1
Headmen,			1										1
Miners,		1										1	2
Drivers and runners,		1											1
Switchmen,		1											1
Laborers,		4	1	3		1			3	2	1	3	18
Totals,		7	3	3		1		4	5	2	2	5	32
Grand totals,	8	15	12	14	2	4	6	5	10	10	10	10	106

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months.												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,				1	1			1	3	2	1	2	11
Irish,				1									1
Polish,	2	1				1		1		1			6
Hungarian,			1			1							2
Italian,						2	1					1	4
Slavonian,						1							1
Lithuanian,	1												1
Austrian,		1				1							1
Russian,					1				1				2
Greek,			1	1									2
Totals,	3	2	2	3	2	6	1	2	4	3	1	3	32

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months.												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	2	7	9	7			2	3	7	3	1	6	47
English,										1			1
Irish,										1			1
German,								1					1
Polish,	2			3		1				1	2		9
Hungarian,							1		1				2
Italian,		2	2		1		1			1	1		8
Slavonian,		1				1							2
Lithuanian,	2	3		2	1	1	2	1	1		4		17
Austrian,		2		1		1				1	1	3	9
Russian,	2		1						1	1	1	1	7
Greek,				1						1			2
Totals,	8	15	12	14	2	4	6	5	10	10	10	10	106

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and types of safety lamps used	
				Shaft	Slope (Coal or Rock)		Drift		Flame	Electric
				Depth	Length	Average pitch—degrees				
Philadelphia and Reading Coal and Iron Co.										
Gilberton Colliery:										
Gilberton,	Schuylkill,				1,655	45		Gaseous,	220	98
Gilberton,					1,863	46		Gaseous,		
Gilberton,					330	51		Gaseous,		
Gilberton,					535	49		Gaseous,		
Gilberton,					515	36		Gaseous,		
Gilberton,					304	44		Gaseous,		
Draper Colliery:										
Draper,	Schuylkill,			604				Gaseous,	209	189
Boston Run Colliery:										
Boston Run,	Schuylkill,				1,304	56		Gaseous,	108	
Bast Colliery:										
Bast,	Schuylkill,			1,159				Gaseous,	239	116
Bast,					1,215	44		Gaseous,		
Potts Colliery:										
Potts,	Columbia,				1,359	50		Gaseous,	573	
Potts,					1,101	51		Gaseous,		
Potts,					1,201	50		Gaseous,		

Lehigh Valley Coal Co. Centralia Colliery:									
Centralia,	Columbia,	Primrose, 192 Primrose Leader, 46 Holmes Top Split, 60 Holmes Bottom Split 48 Mammoth Leader, 54 Mammoth, 288 Skidmore, 132 Seven Foot, 60 Buck Leader, 42 Four Foot, 40 Buck Mountain, 132 Buck Leader Bottom 60 Lykens, 41		660	50		Gaseous,	10	
Continental,	Columbia,	Primrose, 144 Holmes, 112 Mammoth, 348 Skidmore, 46 Buck Mountain, 144	295				Gaseous,	4	
Locust Run,	Columbia,	Mammoth Leader, 60 Mammoth, 242 Skidmore, 64 Buck Leader, 48 Buck Mountain, 59		500	30		Gaseous,	4	
Logan,	Columbia,	Mammoth Leader, 54 Mammoth, 252 Seven Foot, 60 Buck Leader, 40 Buck Mountain, 132		470	27		Gaseous,		
Lehigh Valley Coal Co. Sayre Colliery:									
Sayre,	Northumberland,	Primrose, 65 Holmes Top, 48 Holmes Bottom, 63 Four Foot, 36 Mammoth Top Split, 91 Mammoth Middle, 197 Mammoth Bottom, 48 Skidmore, 114 Seven Foot, 38 Buck Mountain, 49 Lykens, 24	600				Gaseous,	29	2
Morris Ridge,	Northumberland,	Mammoth, 240 Skidmore, 76 Buck Mountain, 115		620	20		Gaseous,	5	

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and types of safety lamps used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Sioux No. 3,	Northumberland,	Primrose,	64							
		Holmes Top Split,	27							
		Holmes Bottom Split	67							
		Four Foot,	41							
		Mammoth Top,	94		621	58		Gaseous,		
		Mammoth Bottom,	90							
		Skidmore,	34							
		Seven Foot,	56							
		Buck Mountain,	47							
Harleigh Brookwood Coal Co.										
Lawrence and Stanton Collieries:										
Lawrence,	Schuylkill,	Little Buck Mountain	36		720	61		Gaseous,		
		Buck Mountain,	120							
		Seven Foot,	36							
		Leader,	20							
Stanton,	Schuylkill,	Skidmore,	48		720	54		Gaseous,		
		Mammoth,	300							
		Four Foot,	48							
		Holmes,	120							
Midvalley Coal Co.										
Midvalley Colliery:										
Midvalley No. 1,	Columbia,	Holmes,	96		730	38		Gaseous,	10	
Midvalley No. 3,		Mammoth Bottom Split.	144		920	40		Gaseous,		
Midvalley No. 7,			30		850	30		Gaseous,	35	

Midvalley No. 5,	Columbia,	Buck Mountain, Lykens, Seven Foot,	120 84 54				Drift,	Non-gas.,	
East Bear Ridge Colliery Co. East Bear Colliery:									
East Bear Ridge,	Schuylkill,	Mammoth Top Split, Mam. Bottom Split, Leader, Skidmore, Seven Foot, Big Buck Mountain, Little Buck Mountain	192 312 22 48 84 108 44		360	40		Gaseous,	12
W. R. McTurk Coal Co. Girard Bear Ridge Colliery:			264						
Girard Bear Ridge,	Schuylkill,	Buck Mountain, Mammoth, Holmes, Primrose,	420 84 48		590	55		Gaseous,	200

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut through in gangways	Number of splits of air currents	Number of persons employed inside	
Philadelphia and Reading Coal and Iron Co.													
Gilberton Colliery:													
Gilberton,	Schuylkill,		Guibal,	21	75	1.9	Steam,	113,000	120,000	82,000	7		
Gilberton,													
Gilberton,			Guibal,	21	75	1.9	Steam,	75,000	91,000	53,000	5	419	
Gilberton,													
Gilberton,													
Gilberton,													
Draper Colliery:													
Draper,	Schuylkill,		Guibal,	12	150	1.6	Steam,	60,125	67,120	50,960	4		
			Guibal,	18	80	1.6	Steam,	27,225	27,440	26,095	2	339	
			Guibal,	18	80	1.6	Steam,	50,160	50,720	42,450	5		
			Guibal,	12	150	1.6	Steam,	79,045	80,880	70,105	9		
Boston Run Colliery:													
Boston Run,	Schuylkill,		Guibal,	21	86	1.8	Steam,	80,820	82,580	55,460	16	108	
Bast Colliery:													
Bast,	Schuylkill,		Guibal,	21	85	2.1	Steam,	18,000	20,925	4,700	3	345	
Bast,			Guibal,	21	85	2.1	Steam,	86,400	90,000	19,642	12		
Potts Colliery:													
Potts,	Columbia,		Guibal,	21	70	1.	Steam,	90,200	94,800	28,000	12		
Potts,			Guibal,	18	86	1.8	Steam,	20,500	22,950	8,340	4	337	
Potts,			Guibal,	18	86	2.	Steam,	33,600	37,600	3,840	2		

Lehigh Valley Coal Co. Centralia Colliery:													
Centralia,	Columbia,	Primrose, Primrose Leader, Holmes Top Split, Holmes Bottom Split, Mammoth Leader, Mammoth, Skidmore, Seven Foot, Buck Leader, Four Foot, Buck Mountain, Buck Leader Bottom, Lykens,	Guibal,		15	75	.5	Steam,	50,000	50,000		5	72
Continental,	Columbia,	Primrose, Holmes, Mammoth, Skidmore, Buck Mountain,	Guibal,		20	67	1	Steam,	47,000	47,000		5	114
Locust Run,	Columbia,	Mammoth Leader, Mammoth, Skidmore, Buck Leader, Buck Mountain,	Buffalo	Forge,	10	192	.6	Electricity,	41,000	41,000		5	95
Logan,	Columbia,	Mammoth Leader, Mammoth, Seven Foot, Buck Leader, Buck Mountain,	Guibal,		12	100	.5	Electricity,	46,000	46,000		7	61
Lehigh Valley Coal Co. Sayre Colliery:													
Sayre,	Northumberland,	Primrose, Holmes Top, Holmes Bottom, Four Foot, Mammoth Top Split, Mammoth Middle, Mammoth Bottom, Skidmore, Seven Foot, Buck Mountain, Lykens,	Guibal,		20	80	2	Steam,	45,000	45,000		9	84
Morris Ridge,	Northumberland,	Mammoth, Skidmore, Buck Mountain,	Guibal,		12	90	.5	Oil,	21,000	21,000		3	47

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut through in gangways	Number of splits of air currents	Number of persons employed inside
Sioux No. 3,	Northumberland,	Primrose, Holmes Top Split, Holmes Bottom Split Four Foot, Mammoth Top, Mammoth Bottom, Skidmore, Seven Foot, Buck Mountain,	Guibal, Guibal,	16 20	85 76	.7 1.2	Steam, Steam,	66,000 89,000	66,000 89,000		1 17	244
Harleigh Brookwood Coal Co. Lawrence and Stanton Collieries: Lawrence,	Schuylkill,	Little Buck Mountain Buck Mountain, Seven Foot, Leader,	Vulcan,	14	75	2.	Electricity,	36,600	40,000	6,800	4	101
Stanton,	Schuylkill,	Skidmore, Mammoth, Four Foot, Holmes,	Vulcan, Jeffrey,	20 12	105 75	1. 2.	Steam, Steam,	71,000 52,440	72,214 52,875	20,803 17,625	2	460

Midvalley Coal Co.												
Midvalley Colliery:												
Midvalley No. 1,	Columbia,	Holmes,	Vulcan,	24	64	1.7	Steam,	80,000	85,000	40,000		122
Midvalley No. 3,		Mammoth Top Split,	Vulcan,	16	75	1.7	Steam,	106,000	111,000	53,000	7	169
Midvalley No. 7,		Mammoth Bottom Split.	Vulcan,	18	75	1.	Steam,	112,000	112,000	67,000		
Midvalley No. 5,	Columbia,	Buck Mountain, Lykens, Seven Foot,	Sturtevant,	6	186	.4	Gasoline,	24,000	25,500	12,000	2	68
East Bear Ridge Colliery Co.												
East Bear Colliery:												
East Bear Ridge,	Schuylkill,	Mammoth Top Split, Mam. Bottom Split, Leader, Skidmore, Seven Foot, Big Buck Mountain, Little Buck Mountain	Guibal,	16	65	1.2	Steam,	79,000	81,000	65,000	6	375
W. R. McTurk Coal Co.												
Girard Bear Ridge Colliery:												
Girard Bear Ridge,	Schuylkill,	Buck Mountain, Mammoth, Holmes, Primrose,	Guibal,	16	80	1.2	Steam,	60,000	64,000	48,500	5	196

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	General Superintendent	Post Office	Superintendent	Post Office	Railroad to Mine
Philadelphia and Reading Coal and Iron Co.						
Gilberton,	Schuylkill,	G. B. Hadesty,	Pottsville,	Morgan Bevan,	Ashland,	Phila. and Reading
Draper,	Schuylkill,	G. B. Hadesty,	Pottsville,	Morgan Bevan,	Ashland,	
Boston Run,	Schuylkill,	E. E. Kaercher,	Pottsville,	John H. Pollard,	Mahanoy City,	
Bast,	Schuylkill,	G. B. Hadesty,	Pottsville,	Morgan Bevan,	Ashland,	
Potts,	Columbia,	G. B. Hadesty,	Pottsville,	Morgan Bevan,	Ashland,	
Locust Spring,	Northumberland,	G. B. Hadesty,	Pottsville,	P. F. Brennan,	Pottsville,	
Locust Gap,	Northumberland,	G. B. Hadesty,	Pottsville,	P. F. Brennan,	Pottsville,	
Bancroft Washery,	Schuylkill,	G. B. Hadesty,	Pottsville,	Morgan Bevan,	Ashland,	
Lehigh Valley Coal Co.						
Centralia,	Columbia,	Thomas Thomas,	Wilkes-Barre,	H. J. Heffner,	Centralia,	Lehigh Valley
Sayre,	Northumberland,					
Harleigh Brookwood Coal Co.						
Lawrence,	Schuylkill,	T. R. Jones,	Frackville,			Penna. and P. and R.
Stanton,						
Midvalley Coal Co.						
Midvalley,	Columbia,	T. E. Snyder,	Hazleton,	H. D. Kostenbauder,	Wilburton,	Lehigh Valley
East Bear Ridge Colliery Co.						
East Bear Ridge,	Schuylkill,	G. T. Davis,	Scranton,	James H. Pierce,	Frackville,	Phila. and Reading
W. R. McTurk Coal Co.						
Girard Bear Ridge,	Schuylkill,	Morton H. McTurk,	Girardville,			Phila. and Reading

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives		
										Pounds of black powder used	Pounds of dynamite used	Pounds of permissible explosives used
Philadelphia and Reading Coal and Iron Co.												
Gilberton,	Schuylkill,	190,167	66,205	4,950	261,322	261	675	3	14	875	183,536	9,950
Draper,	Schuylkill,	209,923	28,498	2	238,423	265	459	3	3	1,175	103,927	
Boston Run,	Schuylkill,	141,267	42,186	1	183,454	267	331	1	3	25	113,055	175
Bast,	Schuylkill,	118,453	50,240	10,439	179,132	184	518	2	13		90,161	13,275
Potts,	Columbia.	276,973	40,899	8,494	326,366	275	540		6		72,585	67,050
Locust Spring and Locust Gap,	Northumberland,	453,798	71,166	2,647	527,611	249	1,208	9	3	14,225	303,101	14,587
Bancroft Washery,	Schuylkill,	2,714			2,714	9	34				50	
Totals,		1,393,295	299,194	26,533	1,719,022		3,855	18	42	16,300	866,415	105,037
Lehigh Valley Coal Co.												
Centralia,	Columbia,	448,217	75,952	6,159	530,328	257	848	2	18		243,107	
Sayre,	Northumberland,	321,229	71,426	5,738	398,393	245	782	1	18	5,475	221,076	
Totals,		769,446	147,378	11,897	928,721		1,630	3	36	5,475	464,183	
Harleigh Brookwood Coal Co.												
Lawrence,	Schuylkill,	286,279	43,398		329,677	249	714	2	7		239,925	1,000
Stanton,		76,459	1,445		77,904	228	45	3	3			
Totals,		362,738	44,843		407,581		759	5	10		239,925	1,000

TABLE 2.—Part 1.—Continued

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives		
										Pounds of black powder used	Pounds of dynamite used	Pounds of permissible explosives used
Midvalley Coal Co.												
Midvalley,	Columbia,	250,156	52,000	3,448	305,604	256	520	----	9	20,900	154,150	----------
East Bear Ridge Colliery Co.												
East Bear Ridge,	Schuylkill,	169,644	15,000	8,562	193,206	263	589	2	7	4,400	84,843	----------
W. R. McTurk Coal Co.												
Girard Bear Ridge,	Schuylkill,	38,398	27,500	11	65,909	268	311	4	2	----------	34,700	7,800
Grand totals,		2,983,677	585,915	50,451	3,620,043	------	7,664	32	106	47,075	1,844,216	113,837

TABLE 2.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Names of Operators	County	Power Plant										Pumps				Haulage					Air Compressors	
		Boilers				Engines										Locomotives						
		Cylindrical		Tubular		Steam Engines (All Classes)		Internal Combustion Engines (Gas)		Electric Dynamos All) Classes)		Number	Total capacity in gallons per minute	Pumps Delivering Water to the Surface		Number of horses and mules	Gasoline	Steam	Air	Electric	Number	Total capacity cubic feet per minute
		Number	Total power horse	Number	Total horse power	Number	Total horse power	Number	Total power horse	Number	Total watts kilo-			Number	Approximate number of gallons per minute							
Philadelphia and Reading Coal and Iron Co.,	{Schuylkill, Columbia,			112	14,000	231	36,370			4	930	107	81,216	18	11,351	366		18	2	4	12	16,908
Lehigh Valley Coal Co.,	{Northumberland, Northumberland, Columbia,	15	555	23	5,300	78	7,988			4	855	11	14,400	7	10,400	101	1	9		15	1	500
Harleigh Brookwood Coal Co.,	Schuylkill,			8	2,800	10	2,525			1	200	13	16,700	3	2,600	59		5		3	4	3,600
Midvalley Coal Co.,	Columbia,			16	3,150	7	633	3	150			8	10,256	8	2,300	58	3	7			1	80,000
East Bear Ridge Colliery Co.,	Schuylkill,			8	1,300	5	1,000			1	150	4	2,500	3	2,000	18		2		5	1	1,500
W. R. McTurk Coal Co.,	Schuylkill,			5	2,250	20	1,900					3	6,200	3	1,800	20		3			3	2,000
Totals,		15	555	172	28,800	351	50,416	3	150	10	2,135	146	131,272	42	30,451	622	4	44	2	27	22	98,508

TABLE 3.—Part 1.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside															Total inside	Outside										Total outside	Grand total inside and outside
		Mine foremen	Assistant mine foremen	Fire bosses	Miners	Miners' laborers	Machine miners	Machine runners and scrapers	Drivers and runners	Motormen and assistants	Doorboys and helpers	Trackmen and brattiemen	Timbermen and rockmen	Pumpmen and pipemen	Electricians and helpers	All other employes		Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Machinists and helpers	Trackmen and helpers	Slate pickers (boys)	Slate pickers (men)	Office employes	All other employes			
Philadelphia and Reading Coal and Iron Co.,	Schuylkill, Northumberland, Columbia,	11	56	----	872	345	----	----	141	7	36	191	258	17	----	712	2,646	----	8	53	202	9	8	68	78	29	754	1,209	3,855
Lehigh Valley Coal Co.,	Columbia, Northumberland,	9	35	----	407	319	----	----	50	40	19	36	31	11	6	222	1,185	----	6	40	71	7	9	34	----	6	272	445	1,630
Harleigh Brookwood Coal Co.,	Schuylkill,	2	5	6	210	90	----	----	35	----	----	----	----	8	----	160	516	4	2	17	41	5	4	25	20	3	122	243	759
Midvalley Coal Co.	Columbia,	3	5	----	151	133	----	----	19	5	2	12	3	3	----	23	359	1	2	6	26	4	3	17	17	3	82	161	520
East Bear Ridge Colliery Co.,	Schuylkill,	1	5	1	145	80	----	----	4	10	1	6	30	4	2	150	439	1	1	10	15	4	4	35	----	3	77	150	589
W. R. McTurk Coal Co.,	Schuylkill,	1	3	----	69	23	----	----	7	----	4	9	20	6	----	54	196	1	1	12	24	6	2	12	3	2	52	115	311
Totals,		27	109	7	1,854	990	----	----	256	62	62	254	342	49	8	1,321	5,341	7	20	138	379	35	30	191	118	46	1,359	2,323	7,664

TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Total
Philadelphia and Reading Coal and Iron Co.,	Schuylkill, Columbia,	20	21	24	17	19	18	20	20	21	24	24	22	250
Lehigh Valley Coal Co.,	Northumberland, Columbia,	20	21	20	16	22	23	19	23	22	22	22	21	251
Harleigh Brookwood Coal Co.,	Northumberland, Schuylkill,	23	23	26	14	13	16	13	22	20	23	23	22	238
Midvalley Coal Co.,	Columbia,	21	21	19	16	20	25	22	22	22	22	23	23	256
East Bear Ridge Colliery Co.,	Schuylkill,	22	23	24	14	15	23	23	24	25	24	23	23	263
W. R. McTurk Coal Co.,	Schuylkill,	24	23	25	16	26	22	24	22	23	24	20	19	268

TABLE 4.—Fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 10	Victor Cockile,	Polish,	Miner,	35	M.	1	1	Locust Spring,	Northumberland.	Instantly killed by fall of coal in pillar workings.
	Paul Cockile,	Polish,	Miner,	32	S.					
13	Peter Savaconis,	Lithuanian,	Miner,	47	M.	1	6	Sayre,	Northumberland.	Fatally injured by explosion of gas in breast.
Feb. 4	Max Chalon,	Austrian,	Miner,	30	M.	1	1	East Bear Ridge,	Schuylkill,	Instantly killed by fall of rock in pillar workings.
10	Simon Merick,	Polish,	Miner,	32	M.	1	1	Draper,	Schuylkill,	Fatally injured. Struck by timber in breast.
Mar. 2	John Buad,	Greek	Laborer,	30	S.			Draper,	Schuylkill,	Fatally injured by fall of coal on gangway.
29	John Ritzgo,	Hungarian,	Driver,	24	M.	1		Lawrence,	Schuylkill,	Instantly killed. Caught between cars on gangway.
April 8	Hugh Sherry,	Irish,	Loader,	53	M.	1		Boston Run,	Schuylkill,	Fatally injured by explosion of blast on gangway.
11	Wendel Thomas,	American,	Assistant foreman,	32	M.	1	2	Gilberton,	Schuylkill,	Instantly killed by cars on slope.
20	Dan Bruce,	Greek,	Miner,	35	W.		4	Draper,	Schuylkill,	Instantly killed by fall of rock on gangway.
May 1	William Metcheers,	Russian,	Miner,	40	S.			Lawrence,	Schuylkill,	Fatally injured by rush of slush on gangway.
24	George Harding,	American,	Miner,	33	M.	1	4	East Bear Ridge,	Schuylkill,	Instantly killed by fall of rock on gangway.
June 21	Paul Albino,	Italian,	Driller,	22	S.			Girard Bear Ridge,	Schuylkill,	Paul Albino was instantly killed and Guy Traveria fatally injured by explosion of blast at face of tunnel.
	Guy Traveria,	Italian,	Chargeman,	29	S.					
26	Metro Nubudia,	Hungarian,	Driver,	40	M.	1	4	Gilberton,	Schuylkill,	Fatally injured. Run over by car. Outside.
	Michael Bogel,	Austrian,	Miner,	28	S.			Locust Spring,	Northumberland.	Fatally injured by explosion of gas in breast.
29	George Metz,	Slavonian,	Laborer,	55	M.	1		Locust Spring,	Northumberland.	Instantly killed. Run over by car. Outside.
30	Charles Stiniconis,	Polish,	Miner,	46	M.	1	4		Schuylkill,	Instantly killed by falling down slope.
July 8	Evan Lucianna,	Italian,	Miner,	21	S.			Bast,	Schuylkill,	Instantly killed by fall of slate at face of gangway.

Aug.	3	Paul Motileviche,	Polish,	Miner,	32	M.	1	4	Locust Spring,	Northumberland.	Instantly killed by rush of coal in manway.
	11	Thomas Smith,	American,	Oiler,	16	S.			Girard Bear Ridge,	Schuylkill,	Fatally injured. Caught by machinery. Outside.
Sept.	1	Edward Wonn,	American,	Miner,	32	S.			Stanton,	Schuylkill,	Instantly killed by fall of coal at face of gangway.
	7	Anthony Kane,	American,	Miner,	47	M.	1	8	Locust Gap,	Northumberland.	Instantly killed by fall of rock at face of breast.
	21	Owen Noon,	American,	Laborer,	37	S.			Locust Spring,	Northumberland.	Fatally injured. Caught between cars. Outside.
	22	John Rovanis,	Russian,	Motorman,	24	M.	1		Centralia,	Columbia,	Instantly killed by fall of coal on gangway.
Oct.	11	Harry Beck,	American,	Miner,	26	M.	1	4	Locust Spring,	Northumberland.	Fatally injured by fall of slate in pillar workings.
	18	William McKone,	American,	Starter,	44	S.			Girard Bear Ridge,	Schuylkill,	Instantly killed by rush of coal in battery.
	25	George Ancavage,	Polish,	Miner,	38	M.	1	5	Stanton,	Schuylkill,	Instantly killed by fall of coal in pillar workings.
Nov.	13	Patrick Lenahan,	American,	Runner,	39	S.			Centralia,	Columbia,	Instantly killed. Run over by railroad cars. Outside.
Dec.	7	Joseph Proppo,	Italian,	Miner,	46	M.	1	4	Stanton,	Schuylkill,	Instantly killed by explosion of blast in breast.
	14	Lawrence Vogel,	American,	Driver,	18	S.			Locust Spring,	Northumberland.	Instantly killed by runaway cars at bottom of slope.
	20	James Purcell,	American,	Slatepicker,	56	S.			Bast,	Schuylkill,	Fatally injured. Run over by cars. Outside.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 5	Charles Dewey,	American,	Motorman,	22	M.	Lawrence,	Schuylkill,	Ruptured himself while placing trolley on wire.
8	Peter Baxter,	Polish,	Motor-helper,	19	S.	Sayre,	Northumberland,	Leg fractured. Caught between cars on gangway.
11	Steve Polabacheck,	Russian,	Laborer,	24	S.	Centralia,	Columbia,	Leg fractured by rush of coal in battery.
	Henry Link,	American,	Miner,	46	M.	Potts,	Columbia,	Thumb and finger blown off by explosion of dynamite cap.
13	Michael Pauza,	Lithuanian,	Miner,	28	M.	Sayre,	Northumberland,	Face and hands burned by explosion of blast at face of pillar.
15	Stina Stincevich,	Russian,	Laborer,	40	M.	Sayre,	Northumberland,	Hands bruised and lacerated by fall of coal on gangway.
21	Alex Zimack,	Polish,	Miner,	21	S.	Sayre,	Northumberland,	Nose fractured by fall of coal at face of breast.
27	Joseph Coveluskie,	Lithuanian,	Miner,	44	M.	Stanton,	Schuylkill,	Back bruised and head lacerated. Struck by cars on gangway.
Feb. 1	John Adolph,	American,	Switchman,	17	S.	Locust Spring,	Northumberland,	Hand crushed. Run over by cars. Outside.
2	Andrew Renisha,	Austrian,	Laborer,	45	M.	Stanton,	Schuylkill,	Three ribs fractured. Struck by piece of rock. Outside.
4	John Pitsock,	Italian,	Miner,	26	M.	Centralia,	Columbia,	Leg fractured by falling from platform onto gangway.
	Anthony Azis,	Lithuanian,	Laborer,	31	M.	Sayre,	Northumberland,	Leg fractured by falling on gangway.
	William Snay,	American,	Laborer,	20	S.	Potts,	Columbia,	Hand crushed. Caught between cars at bottom of slope.
7	John Petuchney,	American,	Laborer,	17	S.	Centralia,	Columbia,	Contusion of knee. Caught between cars. Outside.
8	John Whetstone, Jr.,	American,	Driver,	18	S.	Gilberton,	Schuylkill,	Hand crushed. Caught between cars. Outside.
9	Harry Christ,	American,	Miner,	40	M.	Lawrence,	Schuylkill,	Hand cut. Caught by machinery. Outside.
	Joseph Yudick,	Lithuanian,	Laborer,	37	M.	Sayre,	Northumberland,	Leg fractured. Struck by motor on gangway.

Feb.	10	M. H. O'Brine,	American,	Laborer,	55	W.	Locust Spring,	Northumberland,	Foot crushed. Run over by cars. Outside.
	11	Con Cosloskus,	Lithuanian,	Miner,	30	M.	Draper,	Schuylkill,	Leg fractured by fall of slate at face of pillar.
	17	John Farline,	Italian,	Miner,	32	S.	Lawrence,	Schuylkill,	Shoulder dislocated by falling against rib.
	18	E. E. Kuder,	American,	Stableman,	54	M.	Lawrence,	Schuylkill,	Leg fractured. Caught between car and rib in tunnel.
	19	Paul Morgosh,	Slavonian,	Laborer,	34	M.	Midvalley,	Columbia,	Leg fractured by falling. Outside.
		John Obrisko,	Austrian,	Loader,	26	M.	Stanton,	Schuylkill,	Face burned by explosion of gas in chute.
Mar.	1	Frank Savanushi,	Russian,	Laborer,	20	S.	Sayre,	Northumberland,	Rib fractured. Caught between car and timber on gangway.
	3	Michael Monahan,	American,	Headman,	39	S.	East Bear Ridge,	Schuylkill,	Two fingers crushed. Caught by cars. Outside.
		Dave Hammet,	American,	Footman,	47	M.	East Bear Ridge,	Schuylkill,	Hand crushed. Caught under car on cage.
	7	Anthony Yoskofski,	American,	Motor-helper,	21	S.	Sayre,	Northumberland,	Face and neck burned by explosion of gas on gangway.
	8	John Miller,	American,	Miner,	51	M.	Midvalley,	Columbia,	Foot fractured and lacerated by fall of coal at face of breast.
	9	John Thomas,	American,	Driver,	17	S.	Lawrence,	Schuylkill,	Leg bruised. Run over by cars on gangway.
		Thomas Lamb,	American,	Footman,	26	M.	Centralia,	Columbia,	Foot crushed. Caught between motor and car on gangway.
	22	Joseph Corella,	Italian,	Laborer,	32	S.	Bast,	Schuylkill,	Arm bruised. Caught between timber and car on gangway.
	24	Tony Zadari,	Italian,	Laborer,	24	M.	Gilberton,	Schuylkill,	Finger crushed. Caught by machine drill. Outside.
		William Donoth,	American,	Driver,	33	S.	Bast,	Schuylkill,	Hand crushed. Run over by cars on gangway.
	28	Michael Sheran,	American,	Laborer,	35	S.	Centralia,	Columbia,	Wrist lacerated. Struck by axe.
	29	Kenneth Hudson,	American,	Slatepicker,	16	S.	Lawrence,	Schuylkill,	Leg fractured by falling down breaker steps. Outside.
April	3	Wally Maxan,	Austrian,	Miner,	28	M.	Sayre,	Northumberland,	Foot fractured by fall of coal at face of breast.
	4	George Davis,	American,	Motor-helper,	22	S.	Sayre,	Northumberland,	Face and hands bruned by explosion of gas on gangway.
		Charles Boleski,	Polish,	Laborer,	40	M.	Sayre,	Northumberland,	Face and hands burned by explosion of gas on gangway.
		Fred Schreffler,	American,	Miner,	28	M.	Sayre,	Northumberland,	Hand crushed by fall of rock at face of breast.
		Harry Kerdilla,	Greek,	Laborer,	40	M.	Gilberton,	Schuylkill,	Leg fractured. Struck by chain block. Outside.
	6	James Quigley,	American,	Laborer,	27	S.	Bast,	Schuylkill,	Leg fractured. Caught between cars. Outside.
	7	Adam Glass,	Polish,	Laborer,	21	S.	Sayre,	Northumberland,	Face and hands burned by explosion of gas in breast.
		Victor Setleski,	Polish,	Laborer,	26	M.			
	12	John Grady,	American,	Laborer,	32	S.	Bast,	Schuylkill,	Body strained while lifting timber.
April	15	William Rhoads,	American,	Pumpman,	42	M.	Midvalley,	Columbia,	Hand fractured. Caught by machinery.
	19	Ollie Ryan,	American,	Footman,	27	S.	Centralia,	Columbia,	Knee bruised by falling.

TABLE 5.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
April 24	Anthony Jeretskie,	Lithuanian,	Timberman,	36	M.	Gilberton,	Schuylkill,	Foot bruised. Struck by hammer.
28	Lewis Morgan,	American,	Laborer,	30	M.	Gilberton,	Schuylkill,	Both legs and arm fractured. Caught by cars. Outside.
	Adam Yazinskie,	Lithuanian,	Miner,	22	M.	Gilberton,	Schuylkill,	Face and hands lacerated and eyes injured by explosion of blast.
May 3	Thomas Shadis,	Lithuanian,	Miner,	55	M.	Gilberton,	Schuylkill,	Back bruised. Struck by piece of coal that rolled down manway.
4	Mart Capanzara,	Italian,	Mucker,	32	M.	Bast,	Schuylkill,	Face and hands burned by explosion of gas in tunnel.
June 7	Wally Zawalleck,	Polish,	Miner,	34	M.	Midvalley,	Columbia,	Arm fractured by fall of coal at face of breast.
8	Michael Lituna,	Lithuanian,	Miner,	37	M.	Boston Run,	Schuylkill,	Face and hands burned by explosion of gas in crosscut.
13	George Vaicheck,	Austrian,	Laborer,	49	M.	Centralia,	Columbia,	Leg fractured by rush of dirt from stripping bank. Outside.
16	Andrew Latonicon,	Slavonian,	Footman,	28	M.	East Bear Ridge,	Schuylkill,	Leg lacerated by runway car on slope.
July 2	George Karver,	American,	Repairman,	53	M.	Midvalley,	Columbia,	Top of thumb cut off by guide rail falling on him.
8	Frank Bonas,	Italian,	Miner,	35	M.	Bast,	Schuylkill,	Head crushed by fall of slate in airway.
14	Lew Metersavage,	Lithuanian,	Timberman,	24	M.	Draper,	Schuylkill,	Leg fractured. Struck by timber on gangway.
15	Enoch Shuter,	American,	Driver,	18	S.	Midvalley,	Columbia,	Three ribs fractured. Squeezed between car and timber on gangway.
18	John Kopich,	Hungarian,	Laborer,	27	S.	Bast,	Schuylkill,	Arm and leg fractured by fall of rock in tunnel.
22	Adam Arlowskie,	Lithuanian,	Miner,	41	M.	Draper,	Schuylkill,	Rib fractured by fall of rock on gangway.
Aug. 2	William Scheuren,	American,	Carpenter,	32	M.	Bast,	Schuylkill,	Scalp lacerated and body bruised by falling from scaffold. Outside.
9	Nathan Kieffer,	American,	Carpenter,	45	M.	Bast,	Schuylkill,	Fingers crushed. Struck by timber. Outside.
10	John Vinscunis,	Lithuanian,	Miner,	52	M.	East Bear Ridge,	Schuylkill,	Legs fractured by fall of rock at face of breast.

Aug.	17	Joseph Myers,	American,	Ashman,	21	S.	Girard Bear Ridge,	Schuylkill,	Hand severely burned by steam from hot ashes. Outside.
	19	George Maddis,	German,	Sawyer,	40	M.	Potts,	Columbia,	Thumb and finger lacerated. Caught in revolving saw. Outside.
Sept.	5	Gus Sowiskie,	Hungarian,	Laborer,	38	M.	Gilberton,	Schuylkill,	Ankle fractured. Struck by piece of coal. Outside.
	13	Peter Magunis,	Lithuanian,	Miner,	39	M.	Lawrence,	Schuylkill,	Leg fractured by rush of rock in battery.
		Louis Magdenburg,	American,	Carpenter,	68	M.	Bast,	Schuylkill,	Arm bruised. Struck by timber. Outside.
		William Hauseman,	American,	Carpenter,	54	M.	Potts,	Columbia,	Ankle bruised. Struck by column pipe. Outside.
	16	Stephen Poklemba,	American,	Driver,	19	S.	Midvalley,	Columbia,	Hand crushed. Run over by cars on gangway.
	20	Joseph Montler,	American,	Driver,	23	S.	Bast,	Schuylkill,	Hand crushed. Run over by cars on gangway.
	21	Sam Witmer,	American,	Laborer,	53	S.	Locust Spring,	Northumberland,	Legs crushed and fractured. Caught between cars. Outside.
	22	Christ Novel,	American,	Laborer,	36	M.	Sayre,	Northumberland,	Eye lacerated. Struck by piece of steel.
		Anthony Rovanis,	Russian,	Motor-helper,	23	M.	Centralia,	Columbia,	Collar bone fractured by fall of coal on gangway.
	30	Mathew Foster,	American,	Laborer,	20	S.	Centralia,	Columbia,	Foot crushed. Caught in machinery. Outside.
Oct.	3	James Cunningham,	American,	Footman,	30	S.	Bast,	Schuylkill,	Head and body bruised by car falling on him.
		Harry Kerdilla,	Greek,	Laborer,	40	M.	Gilberton,	Schuylkill,	Arm fractured. Struck by piece of rock. Outside.
	6	James Lynch,	American,	Driver,	17	S.	Bast,	Schuylkill,	Leg and chest bruised. Struck by cars on gangway.
	9	Peter Wills,	English,	Laborer,	68	M.	Centralia,	Columbia,	Hand crushed. Caught by car. Outside.
	11	Harry Boras,	Austrian,	Laborer,	33	M.	Centralia,	Columbia,	Leg fractured by fall of rock on gangway.
	14	James Gallon,	Italian,	Laborer,	41	M.	Centralia,	Columbia,	Face and hands lacerated by explosion of dynamite.
	20	Joseph Flickinger,	American,	Laborer,	29	M.	Midvalley,	Columbia,	Leg bruised. Caught between cars at bottom of slope.
	21	Edward Caine,	Irish,	Miner,	53	M.	Centralia,	Columbia,	Foot fractured by fall of coal at face of breast.
	23	Anthony Shermoski,	Russian,	Miner,	26	S.	Sayre,	Northumberland,	Face and hands burned by explosion of gas in manway.
	24	John Velis,	Polish,	Miner,	39	M.	Sayre,	Northumberland,	Face and hands burned by explosion of gas in breast.
Nov.	2	Joseph Steiner,	Italian,	Engineer,	28	M.	Girard Bear Ridge,	Schuylkill,	Compound fracture of leg. Struck by bar. Outside.
	7	Joseph Bubnes,	Lithuanian,	Miner,	35	S.	Gilberton,	Schuylkill,	Face and hands burned by explosion of gas in chute.
		Robert Malady,	Lithuanian,	Laborer,	29	S.			
	8	John Keravage,	Lithuanian,	Miner,	41	M.	Boston Run,	Schuylkill,	Face and hands burned by explosion of gas in breast.
		Joseph Brazofski,	Lithuanian,	Miner,	49	M.			

TABLE 5.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Nov. 10	Joseph Poketos,	American,	Driver,	22	M.	Potts,	Columbia,	Hand bruised. Caught between car and mule on gangway.
13	Charles Miscuskie,	Russian,	Miner,	28	S.	Sayre,	Northumberland,	Hand and body lacerated by falling down breast.
14	Peter Tuskus,	Polish,	Miner,	29	S.	Gilberton,	Schuylkill,	Hand bruised. Struck by piece of coal at face of breast.
15	Joseph Bonachefsky,	Polish,	Miner,	22	S.	Gilberton,	Schuylkill,	Hands and face burned by explosion of gas in chute.
23	James Bolinskey,	Austrian,	Laborer,	51	M.	Centralia,	Columbia,	Leg fractured. Struck by piece of rock. Outside.
Dec. 1	George Onduskie,	American,	Laborer,	19	S.	Gilberton,	Schuylkill,	Hand crushed. Run over by cars. Outside.
2	James Williard,	American,	Laborer,	18	S.	East Bear Ridge,	Schuylkill,	Foot crushed. Run over by car. Outside.
6	Francis Umlauf,	American,	Miner,	51	M.	Potts,	Columbia,	Leg fractured by fall of coal at face of breast.
	John Putcaria,	Russian,	Laborer,	50	M.	Centralia,	Columbia,	Leg fractured by falling. Outside.
7	Frank Fernimich,	Austrian,	Laborer,	28	S.	Centralia,	Columbia,	Foot crushed. Caught between cars on gangway.
12	Robert Williams,	American,	Assistant foreman,	39	M.	East Bear Ridge,	Schuylkill,	Legs fractured by fall of rock at face of gangway.
15	Adam Boodsick,	Austrian,	Laborer,	55	M.	East Bear Ridge,	Schuylkill,	Thumb crushed. Caught between car and door on gangway.
	Michael Dudon,	Austrian,	Miner,	38	M.	Centralia,	Columbia,	Ribs fractured by falling. Outside.
19	Joseph Moyer,	American,	Laborer,	44	S.	Centralia,	Columbia,	Finger crushed. Struck by piece of coal.
20	Charles Bassington,	American,	Machinist,	33	S.	Midvalley,	Columbia,	Finger crushed. Caught by machinery. Outside.

CONDITION OF COLLIERIES

PHILADELPHIA AND READING COAL AND IRON COMPANY

Gilberton, Draper, Boston Run, Bast, Potts, Locust Spring and Locust Gap Collieries.—Ventilation, drainage and condition as to safety, good.

LEHIGH VALLEY COAL COMPANY

Centralia and Sayre Collieries.—Ventilation, drainage and conditions as to safety, good.

HARLEIGH BROOKWOOD COAL COMPANY

Lawrence and Stanton Collieries.—Ventilation and drainage, fair. Condition as to safety, good.

MIDVALLEY COAL COMPANY

Midvalley Colliery.—Ventilation and drainage, fair. Condition as to safety, good.

EAST BEAR RIDGE COLLIERY COMPANY

East Bear Ridge Colliery.—Ventilation, drainage and condition as to safety, good.

W. R. McTURK COAL COMPANY

Girard Bear Ridge Colliery.—Ventilation and drainage, fair. Condition as to safety, good.

IMPROVEMENTS

PHILADELPHIA AND READING COAL AND IRON COMPANY

Gilberton Colliery.—Tunnel to Little Buck vein from the West Skidmore gangway, 1st lift off No. 3 Skidmore slope, west of No. 3 slope, was completed in March; length 89 yards.

Air tunnel to the Buck Mountain vein from the West Skidmore monkey 5th lift, west of Main tunnel to Mammoth, was completed in March; length 54½ yards.

Air tunnel to Buck Mountain vein, monkey gangway, from the Little Buck vein, monkey gangway, 6th lift, east of Tender slope, was completed in May; length 14 yards.

Bast Colliery.—Air tunnel to Skidmore vein, Bast dip, 4th lift, 30 feet east of traffic tunnel, was completed in November; length 206 yards.

Traffic tunnel to Skidmore vein, Mahanoy basin from the Mammoth vein, Bast dip, 4th lift, on line on tunnel to shaft, was completed in November; length 245 yards.

System of mine car tracks, with steel viaduct, was installed between hoisting shaft and breaker tip. The breaker was remodeled during the year.

Potts Colliery.—The following traffic tunnels were driven during the year: West Primrose gangway, south dip, 2nd lift from the West Diamond gangway, south dip, 2nd lift at breast No. 50, distance 132 yards; Holmes vein from the West Primrose gangway, 1st lift, south dip at breast No. 14, distance 58½ yards; Mammoth vein from the Diamond gangway, 4th lift, west of Mammoth hoisting slope, distance 261½ yards.

Air tunnel was driven to the Mammoth vein, monkey gangway from the Diamond vein, monkey gangway, 4th lift, east of traffic tunnel, distance of 258½ yards.

A bore hole 10 inches in diameter for ventilation was sunk to a depth of 511 feet to the saddle of Mammoth vein in pillar between breasts Nos. 43 and 44, East Mammoth gangway, south dip, 2nd lift, north basin.

Locust Spring Colliery.—Air tunnel to Primrose vein from Bottom split vein east of tunnel to Primrose vein, was completed in March; length 218½ yards.

Tunnel to Diamond vein from the Bottom Split gangway, east of tunnel at foot of Summit slope, was completed in March; length 228 yards.

Installed an electric triplex pump, 8½ inches by 9 inches, in the Summit slope.

Locust Gap Colliery.—Traffic tunnel to Seven Foot vein from the East Skidmore gangway plane level at breast No. 18, was completed in November; length 13 yards.

Installed a 6-foot Jeffrey electrically driven fan for the Upper Buck Mountain vein drift workings.

MIDVALLEY COAL COMPANY

Midvalley Colliery.—Drove 752 feet of rock tunnel for development of veins.

Installed a 250 H. P. Stirling boiler with Coxe traveling grate bars, one jig, and 20 new mine cars, for No. 5 drift.

Built one generator house for electric plant at No. 2 Colliery.

EAST BEAR RIDGE COLLIERY COMPANY

East Bear Ridge Colliery.—5,060 feet of main gangways and 160 feet of main tunnels were driven during the year.

The slope bottom and pump-house were concreted and steel-timbered.

Installed two 8-ton General Electric locomotives and 76 mine cars, inside.

Installed one 7-ton steam engine; one Goyne pump; electric hoist 15 H. P.; one 10 by 12 Flory hoisting engine, and 3 Christ jigs. Considerable remodeling of the breaker was done.

W. R. McTURK COAL COMPANY

Girard Bear Ridge Colliery.—No. 3 tunnel was reopened from the north dip Holmes to north dip Buck Mountain.

West Buck Mountain north dip was reopened 150 feet to solid, and gangway driven in the solid 165 feet.

East Primrose is being worked with rock chutes driven off East Holmes north dip gangway.

Rock gangways were driven 300 feet east and west underneath the north dip Mammoth bed. These gangways are in place of reopening in the Mammoth, which was robbed and pulled down by the lower level, and are driven 18 feet underneath and run parallel to the Mammoth vein.

Built lamp and check house and blacksmith shop.

Installed electric lights on the culm bank.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen, was held in St. Ignatius Hall, Centralia, June 6 and 7. The Board of Examiners was composed of James A. O'Donnell, Mine Inspector, Centralia; H. J. Heffner, Superintendent, Centralia; John Meredith, Miner, Ashland; James Price, Miner, Ashland.

The following persons passed a satisfactory examination and were granted certificates:

MINE FOREMEN

William Burchill, Stewart H. Brewen, Frackville; Oscar L. Wittig, Ashland; Jesse M. Adams, Wilburton; Harry Morgan, Gilberton.

ASSISTANT MINE FOREMEN

David Davis, Thomas Balliett, Gilberton; Norman Reb, Thomas R. Smith, Martin McDonald, Centralia; John T. Furlong, Frank J. Foeller, Domnick Colihan, Mahanoy Plane; Charles Fullis, Girardville.

TWENTY-THIRD DISTRICT

NORTHUMBERLAND COUNTY

Mount Carmel, Pa., February 19, 1917.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor of transmitting herewith my annual report as Inspector of Mines for the Twenty-Third Anthracite District for the year ending December 31, 1916.

Respectfully submitted,

B. I. EVANS,
Inspector.

51—3—1916

SUMMARY OF STATISTICS

Number of collieries,	10
Number of mines,	28
Number of mines in operation,	28
Number of gaseous mines in operation,	14
Number of non-gaseous mines in operation,	14
Number of tons of coal shipped to market,	1,980,155
Number of tons used at mines for steam and heat,	297,411
Number of tons sold to local trade and used by employes,	54,792
Number of tons produced,	2,332,358
Number of tons produced by compressed air machines,	.....
Number of tons produced by electrical machines,	.....
Number of persons employed inside of mines,	4,354
Number of persons employed outside,	1,835
Number of persons employed inside between 16 and 21 years,	283
Number of persons employed outside between 14 and 21 years,	503
Number of fatal accidents inside,	26
Number of fatal accidents outside,	2
Number of non-fatal accidents inside,	21
Number of non-fatal accidents outside,	8
Number of tons of coal produced per fatal accident inside,	89,706
Number of tons produced per fatal accident inside and outside,	83,298
Number of persons employed per fatal accident inside,	167
Number of persons employed per fatal accident outside,	917
Number of persons employed per fatal accident inside and outside,	221
Number of persons employed per non-fatal accident inside,	207
Number of persons employed per non-fatal accident outside,	229
Number of persons employed per non-fatal accident inside and outside,	213
Number of wives made widows,	18
Number of children made orphans,	51
Number of steam locomotives inside,	.....
Number of steam locomotives outside,	22
Number of compressed air locomotives inside,	4
Number of compressed air locomotives outside,	.....
Number of electric motors inside,	22
Number of electric motors outside,	.....
Number of gasoline locomotives inside,	1

Number of gasoline locomotives outside,	1
Number of cylindrical boilers ,	.....
Number of tubular boilers,	126
Number of steam engines of all classes,	312
Number of internal combustion engines (gas),	1
Number of electric dynamos,	10
Number of pumps of all classes,	152
Number of pumps delivering water to surface,	45
Number of air compressors,	13
Number of fans in use,	25
Number of new mines opened,	.....
Number of old mines abandoned,	.....

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Susquehanna Coal Company,	1,036,389
Philadelphia and Reading Coal and Iron Company,	598,238
Colonial Collieries Company,	270,732
Greenough Red Ash Coal Company,	226,221
Excelsior Coal Company,	168,910
Shamokin Red Ash Coal Company,	1,227
Enterprise Coal Company,	30,641
Total,	2,332,358

Production by Counties

Northumberland,	2,332,358

TABLE B.—Fatal and non-fatal accidents inside and outside of mines, number of tons of coal produced per accident, number of persons employed, number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Total number of employes	Number of employes inside per fatal accident	Number of employes outside per fatal accident	Number of employes inside per non-fatal accident	Number of employes outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Susquehanna Coal Co.,	14	2	16	9	3	12	74,027	115,154	2,083	821	2,904	148	410	231	274
Philadelphia and Reading Coal and Iron Co.,	3	------	3	5	3	8	199,412	119,647	1,037	382	1,419	345	--------	207	127
Colonial Collieries Co.,	2	------	2	2	1	3	135,366	135,366	380	220	600	190	--------	190	220
Greenough Red Ash Coal Co.,	4	------	4	1	------	1	56,555	226,221	400	182	582	100	--------	400	--------
Excelsior Coal Co.,	3	------	3	3	------	3	56,303	56,303	304	111	415	101	--------	101	--------
Enterprise Coal Co.,	------	------	------	1	1	2	----------	1,227	150	101	251	--------	--------	150	101
Miscellaneous companies,	------	------	------	------	------	------	----------	----------	----------	18	18	--------	--------	--------	--------
Totals and averages,	26	2	28	21	8	29	89,706	111,065	4,354	1,835	6,189	167	917	207	229

TABLE C.—Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,		1					2					1	4	15.38
Falls of slate,		1		1		1		2	1	1	1		8	30.77
Falls of roof,												1	1	3.85
Mine cars,				1					2				3	11.54
Explosions of gas,							1			1			2	7.69
Suffocation by gas, etc.,		1											1	3.85
Blasts, premature and otherwise,									1	1			2	7.69
Falling into shafts,							2						2	7.69
Falling into slopes,								1					1	3.85
Struck by guide,	2												2	7.69
Totals,	2	3		2		1	5	3	4	3	1	2	26	100.00
Outside														
Cars,			1										1	50.00
Machinery,										1			1	50.00
Totals,			1							1			2	100.00
Grand totals,	2	3	1	2		1	5	3	4	4	1	2	28	

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,	1					1			1		1	1	5	23.81
Falls of slate,	1			1									2	9.53
Mine cars,	1		2					1	1			1	6	28.57
Explosions of gas,						2				1	1		4	19.05
Explosions of powder and dynamite,										1			1	4.76
Blasts, premature and otherwise,												1	1	4.76
Struck by piece of slate,												1	1	4.76
Struck by piece of coal,												1	1	4.76
Totals,	3		2	1		3		1	2	2	2	5	21	100.00
Outside														
Cars,			1			1							2	25.00
Machinery,												1	1	12.50
Struck by plank,					1								1	12.50
Struck by frozen culm,				1									1	12.50
Falling,	1											2	3	37.50
Totals,	1		1	1	1	1						3	8	100.00
Grand totals,	4		3	2	1	4		1	2	2	2	8	29	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Fire bosses,		1								1			2
Miners,		2		1		1	2	2	2	1	1	2	14
Miners' laborers,	2						1	1	1				5
Motormen and assistants,				1									1
Bottommen,									1				1
Trackmen and bratticemen,										1			1
Loaders,							2						2
Totals,	2	3		2		1	5	3	4	3	1	2	26
Outside													
Runners,			1										1
Jig runners,										1			1
Totals,			1							1			2
Grand totals,	2	3	1	2		1	5	3	4	4	1	2	28

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Assistant mine foremen,										1			1
Miners,	1		1	1		3			1	1	2	4	14
Miners' laborers,	1								1			1	3
Drivers and runners,	1		1					1					3
Totals,	3		2	1		3		1	2	2	2	5	21
Outside													
Blacksmiths and carpenters,					1								1
Engineers and firemen,	1												1
Slate pickers (boys),						1						1	2
Switchmen,												1	1
Laborers,			1	1								1	3
Totals,	1		1	1	1	1						3	8
Grand totals,	4		3	2	1	4		1	2	2	2	8	29

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	----	2	1	1	----	1	----	1	2	4	----	----	12
Polish,	2	1	----	----	----	----	3	----	1	----	----	----	7
Italian,	----	----	----	----	----	----	1	----	----	----	----	----	1
Austrian,	----	----	----	1	----	----	1	----	----	----	----	1	3
Russian,	----	----	----	----	----	----	----	2	1	----	1	1	5
Totals,	2	3	1	2	----	1	5	3	4	4	1	2	28

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	2	----	1	1	1	2	----	----	----	1	----	4	12
Polish,	1	----	1	1	----	2	----	----	----	1	1	2	9
Italian,	----	----	----	----	----	----	----	----	1	----	1	1	3
Russian,	1	----	----	----	----	----	----	1	1	----	----	1	4
Serbian,	----	----	1	----	----	----	----	----	----	----	----	----	1
Totals,	4	----	3	2	1	4	----	1	2	2	2	8	29

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number ofsplits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening			Gaseous or non-gaseous	Number and types of safety lamps used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Susquehanna Coal Co. Pennsylvania Colliery:										
Pennsylvania No. 1,	Northumberland	Buck Mountain No. 4,	60		850	24		Gaseous,	375	
Pennsylvania No. 2,		Skidmore No. 7,	50			24		Gaseous,		
Pennsylvania No. 5,		Mammoth Nos. 8 and 9,	120		1,060	33		Gaseous,	12	
Hickory Ridge Colliery:										
Hickory Ridge No. 1,	Northumberland	Bottom Split Mammoth No. 8.	60		1,395	27		Gaseous,	87	
Hickory Ridge No. 2,		Top Split Mammoth No. 9.	72		300	50				
Richards Colliery:										
Richards No. 1,	Northumberland	Top Split Mammoth No. 9.	72		730			Gaseous,	393	
Richards No. 2,		Bottom Split Mammoth No. 8.	36					Gaseous,		
Richards No. 4,		Buck Mountain No. 4,	38				Drift,	Non-gas.,		
Scott Colliery:										
Scott,	Northumberland	Buck Mountain No. 4,	84		905	19		Gaseous,	587	
		Bottom Split Mammoth No. 8.	60			27				
		Primrose No. 11,	48			45			14	
Philadelphia and Reading Coal and Iron Co. Alaska Colliery,:										
Alaska No. 1,	Northumberland	Mammoth Nos. 8 and 9,	180	285		20		Gaseous,	50	
Alaska No. 2,		Holmes No. 10,	60			35				
		Buck Mountain No. 4,	60			22				

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening: Shaft — Depth	Kind of Opening: Slope (Coal or Rock) — Length	Kind of Opening: Slope (Coal or Rock) — Average pitch—degrees	Kind of Opening: Drift	Gaseous or non-gaseous	Number and Types of Safety Lamps Used: Flame	Number and Types of Safety Lamps Used: Electric
Reliance Colliery:										
Reliance No. 1,	Northumberland	Mammoth Nos. 8 and 9,	176		1,370	20		Gaseous,	356	
Reliance No. 2,		Skidmore No. 7,	65	950		35				
		Holmes No. 10,	60			37				
		Primrose No. 11,	60			37				
Colonial Colliery Co.										
Natalie Colliery:										
Natalie No. 2,	Northumberland	Skidmore No. 7,	72		900	45		Non-gas.,		
Natalie No. 3,		Buck Mountain No. 4,	66		700	23				
Natalie No. 4,		Buck Mountain No. 4,	66		275	35				
Natalie Lykens No. 1,		Lykens Valley No. 1,	4 8		1,000	27				
Natalie Lykens No. 2,		Lykens Valley No. 2,	54		1,000	23				
Greenough Red Ash Coal Co.										
Greenough Colliery:										
Greenough No. 1,	Northumberland	Buck Mountain No. 4,	72	215				Non-gas.,		
Greenough No. 2,		Mammoth Nos. 8 and 9,	114				Drift,	Non-gas.,		
Excelsior Coal Co.										
Corbin Colliery:										
Corbin No. 1,	Northumberland	Buck Mountain No. 4,	60		340	36		Non-gas.,		
Corbin No. 2,		Bottom Split Mammoth No. 8.	48		930	24		Non-gas.,		
Corbin No. 3,		Bottom Split Mammoth No. 8.	48		340	24		Gaseous,	25	

Corbin No. 4, -------		Skidmore No. 7, ------	50	----------	450	30	Gaseous, ------
Corbin No. 5, -------		Buck Mountain No. 4,--	56	----------		30	Non-gas., ------
Corbin No. 6, -------		Buck Mountain No. 4,--	56	----------		30	Non-gas., ------
Enterprise Coal Co.							
Enterprise Colliery:							
Enterprise No. 3, ----	Northumberland	Skidmore No. 7, ------	60	----------		18	Non-gas., ------
Enterprise No. 8, ----		Buck Mountain No. 4,--	54	650		35	
		Mammoth Nos. 8 and 9,	132			30	
		Holmes No. 10, -------	48	----------		24	

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air current	Number of persons employed inside	
Susquehanna Coal Co.													
Pennsylvania Colliery:													
Pennsylvania No. 1,	Northumberland	Buck Mountain No. 4,	Guibal,	21	80	1.7	Steam,	122,000	123,000	92,000	3	446	
Pennsylvania No. 2,		Skidmore No. 7,	Guibal,	16	65	1.2	Steam,	60,000	61,500	45,000	2		
Pennsylvania No. 5,		Mammoth Nos. 8 and 9,	Guibal,	16	75	1.5	Steam,	124,000	126,000	9,700	5	264	
Hickory Ridge Colliery:													
Hickory Ridge No. 1,	Northumberland	Bottom Split Mammoth No. 8.	Guibal,	18	78	.4	Steam,	64,600	78,300	23,900	6	336	
Hickory Ridge No. 2,		Top Split Mammoth No. 9.	Sirocco,	10	170	.5	Electricity,	34,400	35,550	14,300	3		
Richards Colliery:													
Richards No. 1,	Northumberland	Top Split Mammoth No. 9.	Vulcan,	18	98	2.1	Steam,	80,000	83,000	38,000	4	456	
Richards No. 2,		Bottom Split Mammoth No. 8.	Guibal,	20	96	2.	Steam,	96,000	99,168	47,000	10		
Richards No. 4,		Buck Mountain No. 4,	Guibal,	16	90	.5	Electricity,	93,090	94,670	46,000	8	102	
Scott Colliery:													
Scott,	Northumberland	Buck Mountain No. 4, Bottom Split Mammoth No. 8. Primrose No. 11,	Guibal,	18	100	2.5	Steam,	150,725	184,250	78,700	10	479	
Philadelphia and Reading Coal and Iron Co.													
Alaska Colliery,:													
Alaska No. 1,	Northumberland	Mammoth Nos. 8 and 9,	Guibal,	18	88	1.5	Steam,	48,500	49,000	42,500	12	606	
Alaska No. 2,		Holmes No. 10,											
		Buck Mountain No. 4,	Guibal,	18	87	1.4	Steam,	49,100	50,000	43,000	12		

Reliance Colliery:													
Reliance No. 1,	Northumberland	Mammoth Nos. 8 and 9,	Guibal,	15	60	1.	Steam,	22,456	23,308	19,498	5	431
Reliance No. 2,		Skidmore No. 7,	Guibal,	21	70	1.3	Steam,	77,728	81,392	56,776	11	
		Holmes No. 10,										
		Primrose No. 11,										
Colonial Colliery Co.													
Natalie Colliery:													
Natalie No. 2,	Northumberland	Skidmore No. 7,	Guibal,	16	70	.7	Steam,	35,200	36,200	7,000	2	380
Natalie No. 3,		Buck Mountain No. 4,	Guibal,	14	85	.5	Steam,	53,600	54,600	6,400	3	
Natalie No. 4,		Buck Mountain No. 4,	Sirocco,	6	300	1.1	Electricity,	12,000	12,300	6,200	2	
Natalie Lykens No. 1,		Lykens Valley No. 1,	Mullen,	14	65	.7	Steam,	29,000	29,900	7,500	3	
Natalie Lykens No. 2,		Lykens Valley No. 2,	Guibal,	12	70	.9	Steam,					
Greenough Red Ash Coal Co.													
Greenough Colliery:													
Greenough No. 1,	Northumberland	Buck Mountain No. 4,	Mullen,	21	75	2.2	Steam,	77,265	83,442	21,780	4	400
Greenough No. 1,	Northumberland	Mammoth Nos. 8 and 9,	Mullen,	14	115	1.5	Steam,	34,278	35,090	5,796	2	
Greenough No. 2,												
Excelsior Coal Co.													
Corbin Colliery:													
Corbin No. 1,	Northumberland	Buck Mountain No. 4,	Beadle,	10	90	1.2		23,000	25,000	7,000		304
Corbin No. 2,		Bottom Split Mammoth No. 8.										
Corbin No. 3,		Bottom Split Mammoth No. 8.		12	96	2.		21,000	23,000	8,000		
Corbin No. 4,		Skidmore No. 7,	Beadle,	12	90	2.	Steam,	20,000	22,000	7,000		
Corbin No. 5,		Buck Mountain No. 4,										
Corbin No. 6,		Buck Mountain No. 4,	Beadle,	10	100	1.5		24,000	27,000	6,500		
Enterprise Coal Co.													
Enterprise Colliery:													
Enterprise No. 3,	Northumberland	Skidmore No. 7,	Guibal,	18	90	2.2	Steam,	42,000	43,500	7,500	4	150
Enterprise No. 8,		Buck Mountain No. 4,										
		Mammoth Nos. 8 and 9,										
		Holmes No. 10,										

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	General Superintendent	Post Office	Superintendent	Post Office	Railroad to Mine
Susquehanna Coal Co. Pennsylvania, Hickory Ridge, Richards, Scott,	Northumberland,	R. A. Quin,	Wilkes-Barre,	William Auman,	Shamokin,	Pennsylvania
Philadelphia and Reading Coal and Iron Co. Alaska, Reliance,	Northumberland,	W. J. Richards, Gen. Mgr.,	Pottsville,	P. F. Brennan,	Shamokin,	Philadelphia and Reading
Colonial Collieries Co. Natalie,	Northumberland,	W. G. Thomas,	Frackville,	J. M. Holt,	Natalie,	Philadelphia and Reading
Greenough Red Ash Coal Co. Greenough,	Northumberland,	Edward Brennan,	Shamokin,	Josiah Rhoads,	Shamokin,	Pennsylvania
Excelsior Coal Co. Corbin,	Northumberland,	G. W. Robertson,	Shamokin,	John Reichard,	Shamokin,	Philadelphia and Reading
Enterprise Coal Co. Enterprise,	Northumberland,	W. L. Connell,	Scranton,	Edward X. Brennan,	Shamokin,	Philadelphia and Reading
Shamokin Red Ash Coal Co. Washery,	Northumberland,	Daniel McGee,	Shamokin,	Joseph Evans,	Shamokin,	Pennsylvania

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives		
										Pounds of black powder used	Pounds of dynamite used	Pounds of permissible explosives used
Susquehanna Coal Co.												
Pennsylvania,	Northumberland	326,429	41,853	18,021	386,303	195	926	4	1	29,150	23,044	130,198
Hickory Ridge,	Northumberland	95,722	32,568	714	129,004	181	552	2	1	32,613	17,464	19,498
Richards,	Northumberland	254,231	47,468	61	301,760	192	804	5	8	36,650	83,505	88,650
Scott,	Northumberland	182,653	31,668	5,001	219,322	192	622	5	2	15,625	15,579	115,444
Totals,		859,035	153,557	23,797	1,036,389	------	2,904	16	12	121,038	139,592	353,790
Philadelphia and Reading Coal and Iron Co.												
Alaska,	Northumberland	324,090	30,772	62	354,924	277	807	2	5	79,250	198,845	10,200
Reliance,	Northumberland	189,147	33,164	21,003	243,314	272	612	1	3	4,400	117,029	107,502
Totals,		513,237	63,936	21,065	598,238	------	1,419	3	8	83,650	315,874	117,702
Colonial Colliery Co.												
Natalie,	Northumberland,	238,297	27,834	4,601	270,732	261	600	2	3	----------	140,500	----------
Greenough Red Ash Coal Co.												
Greenough,	Northumberland,	191,101	30,320	4,800	226,221	238	582	4	1	52,125	73,075	----------

TABLE 2.—Part I—Continued

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons.	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives		
										Pounds of black powder used	Pounds of dynamite used	Pounds of permissible explosives used
Excelsior Coal Co. Corbin,	Northumberland,	147,481	21,009	429	168,910	218	415	3	3	141,000	14,100	
Enterprise Coal Co. Enterprise,	Northumberland,	1,127		100	1,227	30	251		2	3,250	1,236	
Shamokin Red Ash Coal Co. Washery,	Northumberland,	29,877	764		30,641	184	18					
		1,980,155	297,411	54,792	2,332,358		6,189	28	29	401,063	684,377	471,492

TABLE 2.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Names of Operators	County	Power Plant										Pumps				Haulage					Air Compressors	
		Boilers				Engines										Number of horses and mules	Locomotives					
		Cylindrical		Tubular		Steam Engines (All Classes)		Internal Combustion Engines (Gas)		Electric Dynamos (All Classes)		Number	Total capacity in gallons per minute	Pumps Delivering Water to the Surface			Gasoline	Steam	Air	Electric	Number	Total capacity cubic feet per minute
		Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total kilowatts			Number	Approximate number of gallons per minute							
Susquehanna Coal Co.,	Northumberland,			62	9,080	188	21,663			3	865	72	12,460	21	4,810	219		12		14	4	909
Philadelphia and Reading Coal and Iron Co.,				26	3,950	74	6,410					41	32,347	10	3,006	101		2	1	4	4	3,330
Colonial Collieries Co.,				10	2,600	11	1,650	1	90	2	385	8	2,600	8	2,600	53	1	4			3	2,800
Greenough Red Ash Coal Co.,				11	1,800	14	840			2	200	13	5,260	4	4,000	65	1					
Excelsior Coal Co.,				6	850	15	475					11	700	2	468	52		4	3			
Enterprise Coal Co.,				10	2,500	8	713			3	260	6	9,540							4	2	2,450
Shamokin Red Ash Coal Co.,				1	150	2	160					1	10									
Totals,				126	20,330	312	31,851	1	90	10	1,710	152	62,917	45	14,884	490	2	22	4	22	13	9,489

TABLE 3.—Part 1.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside														Total inside	Outside											Grand total inside and outside
		Mine foremen	Assistant mine foremen	Fire bosses	Miners	Miners' laborers	Machine runners and scrapers	Machine miners	Drivers and runners	Motormen and assistants	Doorboys and helpers	Trackmen and brattiemen	Timbermen and rockmen	Pumpmen and pipemen	Electricians and helpers	All other employes	Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Machinists and helpers	Trackmen and helpers	Slate pickers (boys)	Slate pickers (men)	Office employes	All other employes	Total outside	
Susquehanna Coal Co.,	Northumberland,	4	8	46	1,005	302	----	----	115	21	17	59	104	30	3	369	2,083	1	5	40	136	35	10	227	35	31	301	821	2,904
Philadelphia and Reading Coal and Iron Co.,		2	14	----	494	125	----	----	61	2	14	31	14	11	----	269	1,037	----	2	15	46	----	4	44	11	11	249	382	1,419
Colonial Collieries Co.,		1	4	----	170	56	----	----	28	2	----	12	22	12	----	73	380	1	1	16	28	5	6	24	10	2	127	220	600
Greenough Red Ash		5	----	2	190	79	----	----	31	----	2	8	4	9	3	67	400	2	1	8	21	3	2	53	2	4	86	182	582
Excelsior Coal Co.,		1	3	3	173	68	----	----	24	----	----	5	12	5	----	10	304	1	1	8	18	2	2	12	10	2	55	111	415
Enterprise Coal Co.,		1	1	----	60	17	----	----	6	2	----	4	13	11	3	32	150	1	1	4	25	2	----	8	8	2	50	101	251
Shamokin Red Ash Coal Co.,		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	1	----	2	----	----	1	----	----	13	18	18
Totals,		14	30	51	2,092	647	----	----	265	27	33	119	169	78	9	820	4,354	7	12	91	276	47	24	369	76	52	881	1,835	6,189

TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Total
Susquehanna Coal Co.,	Northumberland	18	17	16	15	20	20	20	14	16	12	11	11	190
Philadelphia and Reading Coal and Iron Co.,		23	21	24	18	20	24	25	23	23	25	24	24	274
Colonial Collieries Co.,		23	23	23	15	18	24	20	23	24	23	22	23	261
Greenough Red Ash Coal Co.,		20	19	18	18	22	24	19	20	18	20	20	20	238
Excelsior Coal Co.,		21	21	23	15	19	18	------	24	20	23	20	14	218
Enterprise Coal Co.,		------	------	------	------	------	------	------	------	------	------	8	22	30

TABLE 4.—Fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 16	Enoch Lubesky,	Polish,	Laborer,	24	S.			Richards,	Northumberland,	Killed by being struck by guide attachment at bottom of a shaft in course of sinking.
	John Patrelko,	Polish,	Laborer,	31	M.	1	2			
Feb. 7	Frank Ross,	American,	Fire boss,	50	M	1		Scott,		Suffocated by gas. In making examination of his district he walked into a body of gas.
14	Frank Webber,	American,	Miner,	37	M.	1	2	Corbin,		Back broken by fall of slate near face of gangway. Died in hospital March 1.
	Costy Cardaka,	Polish,	Miner,	40	S.			Alaska,		Killed by fall of top coal at face of breast.
Mar. 15	William Albright,	American,	Runner,	22	S.			Hickory Ridge,		Killed by being run over by railroad cars. Outside.
April 1	Clem. Malick,	Austrian,	Miner,	28	M.	1		Corbin,		Killed by fall of slate in an old breast where he was taking bottom coal up.
10	Alphonso Welsh,	American,	Motor conductor,	18	S.			Richards,		Crushed to death. Caught between top of car and roof while ascending slope.
June 22	James Francis,	American,	Miner,	34	M.	1		Pennsylvania,		Killed by fall of slate near face of gangway.
July 8	Mike Muzareavage,	Polish,	Miner,	32	M.	1	4	Greenough,		Killed by fall of top coal at face of breast.
12	Mike Papa,	Italian,	Loader,	38	S.			Scott,		Caught between cage and timber. They were on the cage being hoisted to the surface. About 8 feet from top of shaft, Andruski dropped his dinner can. He tried to reach it and fell forward against the timber. Papa, who was standing near him, tried to save Andruski and his head was caught between the timber and cage. Andruski's body was pulled through the timber and cage and fell to bottom of shaft.
	John Andruski,	Polish,	Loader,	19	S.					
27	Andrew Selock,	Polish,	Miner,	45	M.	1	4	Scott,		Fatally burned by explosion of gas. Died August 17.

July	29	Dominick Pecko,	Austrian,	Laborer,	24	S.			Reliance,		Killed by being struck by a piece of coal that fell off rib of gangway.
Aug.	21	Mike Metro,	Russian,	Laborer,	33	M.	1	1	Greenough,		Killed by fall of slate while shoveling coal at face of breast.
	26	John Long,	American,	Miner,	29	M.	1	2	Pennsylvania,		Killed by falling down breast a distance of 75 feet, when a plank broke under his weight in an empty breast.
	30	Paul Malnock,	Russian,	Miner,	45	M.	1	7	Hickory Ridge,		Killed by fall of slate at face of breast.
Sept.	8	William Hooper,	American,	Bottomman,	18	S.			Richards,		Killed by being caught by the frames of two cars in the dish at bottom of plane.
	9	Martin Sublitzski,	Russian,	Miner,	38	M.	1	2	Corbin,		Killed by blast at face of breast.
	13	Joseph Glassick,	Polish,	Miner,	45	M.	1	6	Greenough,		Killed by fall of slate at face of breast while shoveling coal.
	27	Daniel Engle,	American,	Laborer,	35	M.	1		Natalie,		Killed. He was riding up slope in a car, when the key came out of pinion wheel and car ran back to bottom.
Oct.	1	Joy Teisher,	American,	Fire boss,	40	M.	1	7	Alaska,	Northumberland,	Fatally burned by explosion of gas. He was examining old workings in company with the assistant foreman, with a safety lamp, and when they entered live workings they opened their lamps and exploded a body of gas. The assistant foreman was also burned. Teisher died from his injuries October 12.
	6	John Bettinger,	American,	Bratticeman,	38	M.	1		Scott,		Killed by fall of slate on gangway.
		Thomas Reilly,	American,	Miner,	43	S.			Natalie,		Killed by blast near face of breast.
	7	George Donay,	American,	Jig runner,	18	S.			Pennsylvania,		Killed by being caught between shakers in breaker. Outside.
Nov.	19	George Matty,	Russian,	Miner,	38	M.	1	5	Richards,		Killed by fall of slate at face of pillar.
Dec.	12	Mike Mininic,	Austrian,	Miner,	39	M.	1	6	Greenough,		Killed by fall of coal at face of breast.
	15	William Polack,	Russian,	Miner,	35	M.	1	3	Pennsylvania,		Killed by being struck by a sulphur ball that fell out of the top near face of gangway while making place for door.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 10	William Nolan,	American,	Driver,	34	M.	Natalie,		Top of finger taken off. Car ran over it while picking sprag up.
12	Nick Promki,	Russian,	Miner,	23	M.	Hickory Ridge,		Knee injured by fall of coal at face of breast.
19	Anthony Osmanski,	Polish,	Laborer,	46	M.	Corbin,		Leg broken. A piece of slate fell on it in chute.
	Daniel McMullen,	American,	Engineer,	25	S.	Natalie,		Face cut and leg bruised. He was standing on a wedge 15 feet above the ground and slipped and fell. Outside.
Mar. 23	Christ Schaum,	American,	Miner,	25	M.	Greenough,		Legs and arm broken while riding on gunboat spreader down the slope. The gunboat stuck in slope and the rope slackened before the engineer discovered it, and the gunboat released itself, throwing him to bottom of boat.
	George Terawitsky,	Serbian,	Driver,	24	S.	Richards,	Northumberland	Two toes cut off by car running over his foot.
30	Charles Harnick,	Polish,	Laborer,	24	S.	Richards,		Leg and arm broken. Run over by railroad cars. Outside.
April 1	Harry Kutzer,	American,	Laborer,	20	S.	Enterprise,		Arm broken. Struck by a piece of frozen culm. Outside.
25	Joe Shebasnefski,	Polish,	Miner,	22	S.	Corbin,		Leg broken by fall of slate off side of pillar.
May 2	Roy Ostreich,	American,	Carpenter,	21	S.	Alaska,		Skull fractured. Struck by a plank under the breaker. Outside.
June 14	Joe Borsavage,	American,	Slate picker,	15	S.	Richards,		Internally injured by falling off a box car while playing at noon hour. Outside.
17	John Lasko,	Polish,	Miner,	48	M.	Richards,		Burned by explosion of gas. Lasko fired a shot at face of gangway (using locked safety lamp). He opened his safety lamp to fire another shot and ignited a small body of gas.
	James Brassington,	American,	Miner,	23	S.			
28	Lewis Visnefski,	Polish,	Miner,	30	S.	Richards,		Back broken by fall of coal at face of breast.

Aug.	2	Melo Custy,	Russian,	Driver,	20	S.	Richards,			Leg broken. Caught between car and high side of gangway.
Sept.	6	Tony Gedro,	Italian,	Laborer,	30	M.	Natalie,			Leg broken. Caught between car and timber on gangway.
	22	Syl. Antovick,	Russian,	Miner,	23	M.	Richards,			Ribs broken by fall of coal while dressing off a shot at face of breast.
Oct.	1	Mike Carroll,	American,	Assistant foreman,	40	M.	Alaska,			Burned by explosion of gas in an old breast.
	6	John Weegis,	Polish,	Miner,	38	M.	Scott,			Arm taken off by explosion of dynamite.
Nov.	18	George Waldovage,	Polish,	Miner,	35	M.	Scott,			Burned by explosion of gas. He fired a shot and went back with a naked light on his head.
	19	Joseph Gotto,	Italian,	Miner,	37	M.	Reliance,			Hips injured by fall of coal at face of breast.
Dec.	1	Sol Dimicola,	Italian,	Miner,	36	M.	Alaska,			Leg broken. His foot slipped under a buggy when coming off dump and his leg was caught.
		Arthur Werts,	American,	Switchman,	19	S.	Alaska,			Head injured. He was throwing a switch and fell, his head striking the rail. Outside.
		Robert Minick,	American,	Miner,	37	M.	Reliance,		Northumberland	Eye injured. Struck by a piece of coal from pick while dressing off a shot at face of chute.
	4	John Theul,	American,	Slate picker,	15	S.	Reliance,			Finger severed. He put his finger into the pedestal cap of shaker shaft in breaker and the key seat caught finger. Outside.
	9	Alfred Persing,	American,	Laborer,	59	M.	Alaska,			Eye injured. Struck by a piece of slate from pick while cutting a hitch in the slate for a battery in a chute.
	14	Staney Dudzerney,	Polish,	Miner,	41	M.	Corbin,			Leg broken by fall of coal at face of breast.
	15	John Poploski,	Russian,	Miner,	25	S.	Enterprise,			Pelvis fractured. Struck by flying coal while retreating from a shot in a chute. He shortened the match.
	28	Paul Sesney,	Polish,	Laborer,	50	M.	Pennsylvania,			Leg broken. While getting out of accommodation car at top of slope he slipped and fell. Outside.

CONDITION OF COLLIERIES

SUSQUEHANNA COAL COMPANY

Pennsylvania Colliery.—Nos. 1 and 5 Slopes, ventilation, drainage, and general condition as to safety, good.

Hickory Ridge Colliery.—Ventilation, drainage, and safety condition, good.

Richards Colliery.—Ventilation, drainage and general condition as to safety, good.

Scott Colliery.—Ventilation, drainage, and safety conditions, good.

PHILADELPHIA AND READING COAL AND IRON COMPANY

Alaska and Reliance Collieries.—Ventilation, drainage, and safety conditions, very good.

COLONIAL COLLIERIES COMPANY

Natalie Colliery.—Ventilation and safety conditions, good. Drainage, fair.

GREENOUGH RED ASH COAL COMPANY

Greenough Colliery.—Ventilation, drainage and safety conditions, good.

EXCELSIOR COAL COMPANY

Corbin Colliery.—Ventilation, drainage, and safety conditions, good.

ENTERPRISE COAL COMPANY

Enterprise Colliery.—Ventilation fair. Drainage poor. Safety conditions, not good.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in Odd Fellows' Hall, June 6 and 7. The Board of Examiners was composed of B. I. Evans, Inspector, Mt. Carmel; William Auman, Superintendent, Shamokin; James McHugh, Miner, Locust Gap; and Harry Holman, Miner, Shamokin.

The following persons passed a satisfactory examination and were granted certificates:

ASSISTANT MINE FOREMEN

Joseph Morgan, Anthony Primoren, John Guise, Kulpmont; Louis Bache, Harry Alexander, Wesley Williams, Peter Profit, Edward Delcamp, John Cheslock, Philip C. Wagner, Samuel Griffiths, Frederick L. Persing, Mount Carmel.

TWENTY-FOURTH DISTRICT

NORTHUMBERLAND COUNTY

Shamokin, Pa., February 23, 1917.

Hon. James E. Roderick, Chief of Department of Mines:

Sir. I have the honor of transmitting herewith my annual report as Inspector of Mines for the Twenty-fourth Anthracite District, for the year ending December 31, 1916.

Respectfully submitted,

P. J. FRIEL,
Inspector.

SUMMARY OF STATISTICS

Number of collieries,	14
Number of mines,	34
Number of mines in operation,	34
Number of gaseous mines in operation,	24
Number of non-gaseous mines in operation,	10
Number of tons of coal shipped to market,	1,974,419
Number of tons used at mines for steam and heat,	313,153
Number of tons sold to local trade and used by employes,	78,338
Number of tons produced,	2,365,910
Number of persons employed inside of mines,	4,015
Number of persons employed outside,	1,781
Number of persons employed inside between 16 and 21 years,	336
Number of persons employed outside between 14 and 21 years,	489
Number of fatal accidents inside,	18
Number of fatal accidents outside,	1
Number of non-fatal accidents inside,	72
Number of non-fatal accidents outside,	9
Number of tons of coal produced per fatal accident inside,	131,439
Number of tons produced per fatal accident inside and outside,	124,522
Number of persons employed per fatal accident inside,	223
Number of persons employed per fatal accident outside,	1,781
Number of persons employed per fatal accident inside and outside,	305
Number of persons employed per non-fatal accident inside,	56
Number of persons employed per non-fatal accident outside,	198
Number of persons employed per non-fatal accident inside and outside,	72
Number of wives made widows,	14
Number of children made orphans,	21
Number of steam locomotives outside,	14
Number of electric motors inside,	12
Number of electric motors outside,	7
Number of gasoline locomotives inside,	3

Number of tubular boilers,	125
Number of steam engines of all classes,	329
Number of electric dynamos,	10
Number of pumps of all classes,	138
Number of pumps delivering water to surface,	41
Number of air compressors,	18
Number of fans in use,	34
Number of new mines opened,	2

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Philadelphia and Reading Coal and Iron Company, ...	1,475,260
Susquehanna Coal Company, ...	463,150
Shipman Koal Company, ...	159,112
Buck Ridge Coal Mining Company, ...	129,516
Trevorton Colliery Company, ...	122,151
Thomas D. Bergen, ...	9,100
Carbon Creek Coal Company, ...	7,621
Total, ...	2,365,910

Production by Counties

Northumberland, ...	2,365,910

TABLE B.—Fatal and non-fatal accidents inside and outside of mines, number of tons of coal produced per accident, number of persons employed, number employed per accident

Names of Operators	Fatal Accidents			Non-fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Total number of employes	Number of employes inside per per fatal accident	Number of employes outside per fatal accident	Number of employes inside per non-fatal accident	Number of employes outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Philadelphia and Reading Coal and Iron Co.,	10	----	10	42	2	44	147,526	35,125	2,237	959	3,196	224	--------	53	480
Susquehanna Coal Co.,	5	------	5	16	5	21	92,630	28,947	992	456	1,448	198	--------	62	91
Shipman Koal Co.,	1	------	1	2	------	2	159,112	79,556	297	155	452	297	--------	149	--------
Buck Ridge Coal Mining Co.,	------	------	------	9	1	10	--------	14,391	289	99	388	--------	--------	32	99
Trevorton Colliery Co.,	2	------	2	3	1	4	61,076	40,717	190	75	265	95	--------	63	75
Carbon Creek Coal Co.,	------	1	1	------	------	------	--------	--------	--------	25	25	--------	25	--------	--------
Miscellaneous Companies,	------	------	------	------	------	------	--------	--------	10	12	22	--------	--------	--------	--------
Totals and averages,	18	1	19	72	9	81	131,439	32,860	4,015	1,781	5,796	223	1,781	56	198

TABLE C.—Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,	1			1		1							3	16.67
Falls of slate,	1											1	2	11.11
Falls of roof,						1			1				2	11.11
Mine cars,					1			1				1	3	16.67
Explosions of gas,							1			1			2	11.11
Suffocation by rush of coal,									1				1	5.55
Blasts, premature and otherwise,						1							1	5.56
Falling into shafts,		1											1	5.56
Crushed at batteries,										1			1	5.55
Mules,						1							1	5.55
Unknown (found dead),							1						1	5.56
Totals,	2	1		1	1	4	2	1	2	2		2	18	100.00
Outside														
Falling,									1				1	100.00
Totals,									1				1	100.00
Grand totals,	2	1		1	1	4	2	1	3	2		2	19	

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,	2		2	2		1				1			8	11.11
Falls of slate,	1	1			1	1	1			1	1		7	9.72
Falls of roof,	1	1		3			1				1		7	9.72
Mine cars,		1	1	1	2	1		1					7	9.72
Explosions of gas,		2	2	1	3	4	1		2		1		16	22.22
Explosions of powder and dynamite,			1		1								2	2.78
Blasts, premature and otherwise,	2					1	1	1		1	1		7	9.72
Struck by piece of rock and coal,	1			1	1		1						4	5.56
Struck by timber,			1					1			1	1	4	5.56
Falling,				2		1				2	1	1	7	9.72
Mules,							1						1	1.39
Struck by nail,										1			1	1.39
Struck by door,										1			1	1.39
Totals,	7	5	7	10	8	9	6	3	2	7	6	2	72	100.00
Outside														
Cars,	1						2		1				4	44.45
Machinery,						1							1	11.11
Struck by piece of rock,	1												1	11.11
Struck by wheel,		1											1	11.11
Bursting of steam hose,									1				1	11.11
Falling,											1		1	11.11
Totals,	2	1				1	2		2		1		9	100.00
Grand totals,	9	6	7	10	8	10	8	3	4	7	7	2	81	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Fire bosses,										1			1
Miners,	2	1		1		2	2		1	1		1	11
Drivers and runners,					1	1						1	3
Trackmen and bratticemen,								1					1
Safety inspectors,						1							1
Loaders,									1				1
Totals,	2	1		1	1	4	2	1	2	2		2	18
Outside													
Laborers,									1				1
Totals,									1				1
Grand totals,	2	1		1	1	4	2	1	3	2		2	19

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Miners,	5	2	7	4	4	7	4	1	2	4	4	1	45
Miners' laborers,	1	2		3	2	1							9
Drivers and runners,					1	1		1					3
Laborers,	1			2						2	1		6
Loaders,		1									1		2
Couplers,					1								1
Timbermen and rockmen,				1				1				1	3
Surveyors,							1						1
Loader bosses,							1						1
Inspectors,										1			1
Totals,	7	5	7	10	8	9	6	3	2	7	6	2	72
Outside													
Blacksmiths and carpenters,											1		1
Laborers,	1						2		1				4
Slatepickers (boys),						1							1
Drivers,	1												1
Loaders,		1											1
Conductors,									1				1
Totals,	2	1				1	2		2		1		9
Grand totals,	9	6	7	10	8	10	8	3	4	7	7	2	81

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	2			1		2			1	1		2	9
English,								1					1
Polish,		1			1	2			2	1			7
Italian,							1						1
Russian,							1						1
Totals,	2	1		1	1	4	2	1	3	2		2	19

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	7	2	1	5	2	3	4	1	2	2	3	1	33
English,					1			1		1			3
Welsh,												1	1
Irish,								1					1
German,						1							1
Polish,		1	2	2	1	2	1		2	2	3		16
Italian,		2	1	1	1								5
Slavonian,			1		1								2
Lithuanian,	1		2										3
Austrian,					2	1	1						4
Russian,	1	1		2		3	2			2	1		12
Totals,	9	6	7	10	8	10	8	3	4	7	7	2	81

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind or Opening				Gaseous or non-gaseous	Number and Types or Safety Lamps Used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Philadelphia and Reading Coal and Iron Co. North Franklin Colliery:										
North Franklin No. 1,	Northumberland,	No. 5 Buck Mountain No. 8 Mammoth, No. 8½ Mammoth, No. 9 Mammoth,	120 60 132 144				Drift,	Non-gas.,	4	
North Franklin No. 2,	Northumberland,	No. 5 Buck Mountain No. 8 Mammoth, No. 9 Mammoth, No. 10 Holmes,	120 60 144 72		590	40		Gaseous,	42	
North Franklin No. 3,	Northumberland,	No. 8 Mammoth, No. 8½ Mammoth, No. 9 Mammoth, No. 10 Holmes,	60 132 144 72		560	20		Gaseous,	34	
Bear Valley Colliery:										
Bear Valley No. 1,	Northumberland,	No. 4 Lykens Valley No. 5 Buck Mountain No. 7 Skidmore, No. 8 Mammoth, No. 9 Mammoth,	68 104 51 103 114				Drift,	Non-gas.,	2	

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind or Opening				Gaseous or non-gaseous	Number and Types of Safety Lamps Used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Bear Valley No. 2,	Northumberland,	No. 4 Lykens Valley	63	319				Gaseous,	22	
		No. 5 Buck Mountain	104							
		No. 7 Skidmore,	51							
		No. 8 Mammoth,	103							
		No. 9 Mammoth,	114							
		No. 10½ Holmes,	105							
		No. 11 Primrose,	77							
		No. 14 Little Diamond	51							
Bear Valley No. 3,	Northumberland,	No. 10 Holmes,	95	604				Gaseous,	4	
		No. 10½ Holmes,	105							
		No. 11 Primrose,	77							
Bear Valley No. 4,	Northumberland,	No. 8 Mammoth,	72		670	20		Gaseous,	4	
		No. 8½ Mammoth,	132							
		No. 9 Mammoth,								
		No. 10 Holmes,	60							
		No. 10½ Holmes,	66							
		No. 11 Primrose,	96							
Burnside Colliery:										
Burnside No. 1,	Northumberland,	No. 4 Lykens Valley	81	724				Gaseous,	176	
		No. 5 Buck Mountain	96							
		No. 7 Skidmore,	51							
		No. 8 Mammoth,	120							

		No. 9 Mammoth, 87 No. 10 Holmes, 99 No. 10½ Holmes, 51						
Burnside No. 2,	Northumberland,	No. 4 Lykens Valley 81 No. 5 Buck Mountain 96 No. 7 Skidmore, 51 No. 8 Mammoth, 120 No. 9 Mammoth, 87 No. 10 Holmes, 99 No. 10½ Holmes, 24			Drift,	Non-gas.,	6	
Stirling Colliery:								
Stirling No. 1,	Northumberland,	No. 5 Buck Mountain 105 No. 7 Skidmore, 45 No. 8 Mammoth, 93 No. 9 Mammoth, 81 No. 11 Primrose, 101		1,328	24	Gaseous,	206	
Henry Clay Colliery:								
Henry Clay No. 1,	Northumberland,	No. 5 Buck Mountain 66 No. 7 Skidmore, 46 No. 8 Mammoth, 86 No. 9 Mammoth, 51 No. 10 Holmes, 89 No. 10½ Holmes, 90 No. 11 Primrose, 86 No. 16 Little Tracy, 111	865			Gaseous,	275	
Big Mountain Colliery:								
Big Mountain No. 1,	Northumberland,	No. 4 Lykens Valley 54 No. 5 Buck Mountain 56 No. 8 Mammoth, 91 No. 9 Mammoth, 61 No. 10 Holmes, 50		730	55	Gaseous,	35	
Big Mountain No. 2,	Northumberland,	No. 5 Buck Mountain 56 No. 8 Mammoth, 91 No. 9 Mammoth, 61		770	25	Gaseous,	33	
Big Mountain No. 3,	Northumberland,	No. 4 Lykens Valley 54 No. 5 Buck Mountain 56				Drift, Gaseous,	4	

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and Types or Safety Lamps Used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Susquehanna Coal Co. Cameron Colliery:										
		No. 2 Lykens Valley	72							
		No. 4 Lykens Valley	60				Drift,	Non-gas.,		
		No. 5 Buck Mountain	50							
Cameron No. 1, Cameron No. 2, Cameron No. 3, Cameron No. 4, Cameron No. 5, Cameron No. 6,	Northumberland,	No. 6 Seven Foot,	36							
		No. 7 Skidmore,	48		1,326	39		Gaseous,	98	
		No. 7½ Mammoth,	72							
		No. 8 Mammoth,	60							
		No. 9 Mammoth,	72				Drift,	Gaseous,	120	5
		No. 9¾ Mammoth,	48							
		No. 10 Holmes,	60							
		No. 10½ Holmes,	56		560	41		Gaseous,	27	14
		No. 11 Primrose,	60							
		No. 12 Orchard,	48	898				Gaseous,	140	7
		No. 13 Big Diamond,	24							
		No. 14 Little Diamond	40		320	27		Gaseous,	116	7
Luke Fidler Colliery:										
		No. 2 Lykens Valley	72							
Luke Fidler No. 1,	Northumberland,	No. 4 Lykens Valley	60	497				Gaseous,	150	
Luke Fidler No. 2,	Northumberland,	No. 8 Mammoth,	60							
		No. 9 Mammoth,	72							
		No. 10 Holmes,	60	960				Gaseous,	174	8
		No. 11 Primrose,	60							

Hickory Swamp Colliery:									
Hickory Swamp No. 1,	Northumberland,	No. 4 Lykens Valley*	60		590	47		Gaseous,	85	4
		No. 8 Mammoth,	60							
		No. 9 Mammoth,	72							
Shipman Koal Co. Colbert Colliery:										
		No. 4 Lykens Valley	60	350				Gaseous,	110	
Colbert No. 1,	Northumberland,	No. 5 Buck Mountain	84							
Colbert No. 2,		No. 8 Mammoth,	54							
		No. 9 Mammoth,	60				Drift,	Gaseous,	30	
		No. 9½ Mammoth,	42							
Buck Ridge Coal Mining Co. Buck Ridge Colliery:										
		No. 13 Big Diamond*	60		430	55		Gaseous,		
Buck Ridge No. 1,	Northumberland,	No. 14 Little Diamond	72						259	
Buck Ridge No. 2,		No. 15 Big Tracy,	68		140	40		Non-gas.,		
Buck Ridge No. 3,		No. 16 Little Tracy,	68		500	30		Gaseous,		
Buck Ridge No. 4,							Drift,	Non-gas.,		
Trevorton Colliery Co. Katherine Colliery:										
		No. 2 Lykens Valley	96				Drift,	Gaseous,	1	
Katherine No. 1,	Northumberland,	No. 3 Lykens Valley	30							
Katherine No. 2,		No. 4 Lykens Valley	36				Drift,	Non-gas.,	1	
Katherine No. 3,		No. 5 Buck Mountain	120				Drift,	Non-gas.,	1	
Katherine No. 4, *		No. 5½ Buck Mountain	60							
Thomas D. Bergen Bergen Colliery:										
		No. 7 Skidmore,	60				Drift,	Non-gas.,	1	
Bergen,	Northumberland,	No. 15 Tracy,	42				Drift,	Non-gas.,		
		No. 16 Tracy,								

*Ventilated by natural means no air measurements taken.

TABLE 1.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangway	Number of splits of air currents	Number of persons employed inside
Philadelphia and Reading Coal and Iron Co.												
North Franklin Colliery:												
North Franklin No. 1, --	Northumberland,	No. 5 Buck Mountain	Guibal, -------	18	70	.7	Electricity,---	51,000	51,800	40,100	8	482
		No. 8 Mammoth, ---										
		No. 8½ Mammoth, --										
		No. 9 Mammoth, ---										
North Franklin No. 2, --	Northumberland,	No. 5 Buck Mountain	Guibal, -------	15	75	.4	Electricity,---	50,000	50,300	40,100	3	
		No. 8 Mammoth, ---	Guibal, -------	12	85	.2	Steam, ------	14,000	14,200	12,300	2	
		No. 9 Mammoth, ---										
		No. 10 Holmes, ----										
North Franklin No. 3, -	Northumberland,	No. 8 Mammoth, ---	Guibal, -------	18	84	2.1	Steam, ------	42,200	42,900	35,200	7	
		No. 8½ Mammoth, --										
		No. 9 Mammoth, ---										
		No. 10 Holmes, ----										
Bear Valley Colliery:												
		No. 4 Lykens Valley										
Bear Valley No. 1, -------	Northumberland,	No. 5 Buck Mountain										
		No. 7 Skidmore, ---										
		No. 8 Mammoth, ---										
		No. 9 Mammoth, ---										
		No. 4 Lykens Valley										

Bear Valley No. 2,	Northumberland,	No. 5 Buck Mountain No. 7 Skidmore, No. 8 Mammoth, No. 9 Mammoth, No. 10½ Holmes, No. 11 Primrose, No. 14 Little Diamond	Guibal,	18	90	.8	Steam,	54,300	55,650	51,600	10	425
Bear Valley No. 3,	Northumberland,	No. 10 Holmes, No. 10½ Holmes, No. 11 Primrose,	Guibal,	15	98	.7	Electricity,	42,200	43,340	36,320	8	
Bear Valley No. 4,	Northumberland,	No. 8 Mammoth, No. 8½ Mammoth, No. 9 Mammoth, No. 10 Holmes, No. 10½ Holmes, No. 11 Primrose,	Jeffrey,	6	175	.9	Electricity,	43,430	43,600	42,200	7	
Burnside Colliery:												
Burnside No. 1,	Northumberland,	No. 4 Lykens Valley No. 5 Buck Mountain No. 7 Skidmore, No. 8 Mammoth, No. 9 Mammoth, No. 10 Holmes, No. 10½ Holmes,	Guibal,	18	85	1.0	Steam,	71,200	73,600	57,100	8	497
Burnside No. 2,	Northumberland,	No. 4 Lykens Valley No. 5 Buck Mountain No. 7 Skidmore, No. 8 Mammoth, No. 9 Mammoth, No. 10 Holmes, No. 10½ Holmes,	Guibal,	15	85	1.0	Steam,	33,880	34,980	21,810	3	
Stirling Colliery:												
Stirling No. 1,	Northumberland,	No. 5 Buck Mountain No. 7 Skidmore, No. 8 Mammoth, No. 9 Mammoth, No. 11 Primrose,	Guibal,	21	60	2.3	Steam,	74,050	75,630	49,460	10	239
Henry Clay Colliery:												
		No. 5 Buck Mountain No. 7 Skidmore, No. 8 Mammoth,	Guibal,	21	75	1.4	Steam,	55,050	55,540	51,270		277

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air current	Number of persons employed inside
Henry Clay No. 1,	Northumberland,	No. 9 Mammoth, No. 10 Holmes, No. 10½ Holmes, No. 11 Primrose, No. 16 Little Tracy,	Guibal,	15	120	1.2	Steam,	24,770	24,950	23,780	7	
Big Mountain Colliery:												
Big Mountain No. 1,	Northumberland,	No. 4 Lykens Valley, No. 5 Buck Mountain, No. 8 Mammoth, No. 9 Mammoth, No. 10 Holmes,	Guibal,	18	65	.8	Steam,	51,400	51,800	42,830	6	
Big Mountain No. 2,	Northumberland,	No. 5 Buck Mountain, No. 8 Mammoth, No. 9 Mammoth,	Guibal,	18	60	.6	Steam,	48,560	50,110	41,900	6	317
Big Mountain No. 3,	Northumberland,	No. 4 Lykens Valley, No. 5 Buck Mountain,	Guibal,	12	120	1.2	Steam,	30,250	31,800	25,080	6	
Susquehanna Coal Co. Cameron Colliery:												
Cameron No. 1, Cameron No. 2, Cameron No. 3,	Northumberland,	No. 2 Lykens Valley, No. 4 Lykens Valley, No. 5 Buck Mountain,	Guibal,	20	73	1.4	Steam,	64,210	64,840	31,250	5	

Cameron No. 4, ---------- Cameron No. 5, ---------- Cameron No. 6, ----------		No. 6 Seven Foot, -- No. 7 Skidmore, --- No. 7½ Mammoth, -- No. 8 Mammoth, --- No. 9 Mammoth, --- No. 9¾ Mammoth, -- No. 10 Holmes, ---- No. 10½ Holmes, --- No. 11 Primrose, --- No. 12 Orchard, --- No. 13 Big Diamond, No. 14 Little Diamond	Guibal, -------- Guibal, --------	16 18	72 90	1.4 2.2	Electricity, --- Steam, ------	53,450 92,570	54,090 93,000	25,600 42,500	6 5	539
			Guibal, -------- Guibal, -------- Guibal, --------	16 16 16	40 83 96	.4 1.5 2.1	Steam, ------ Steam, ------ Steam, ------	42,510 64,380 66,010	43,090 64,840 66,570	20,600 30,500 32,000	5 5 6	
Luke Fidler Colliery:													
Luke Fidler No. 1, ------	Northumberland,	No. 2 Lykens Valley No. 4 Lykens Valley	Guibal, --------	18	90	2.0	Steam, ------	56,000	59,400	24,500	6	330
Luke Fidler No. 2, ------	Northumberland,	No. 8 Mammoth, --- No. 9 Mammoth, --- No. 10 Holmes, ---- No. 11 Primrose, ---	Guibal, -------- Sturtevant, --	18 14	106 90	2.0 1.5	Steam, ------ Steam, ------	82,000 53,000	87,400 57,280	35,700 22,800	5 4	
Hickory Swamp Colliery:													
Hickory Swamp No. 1, --	Northumberland,	No. 4 Lykens Valley No. 8 Mammoth, --- No. 9 Mammoth, ---	Guibal, -------- Guibal, --------	16 14	120 100	.5 .5	Steam, ------ Steam, ------	104,000 26,400	110,000 26,700	21,700 14,400	6 1	123
Shipman Koal Co.													
Colbert Colliery:													
Colbert No. 1, ---------- Colbert No. 2, ----------	Northumberland,	No. 4 Lykens Valley No. 5 Buck Mountain No. 8 Mammoth, --- No. 9 Mammoth, --- No. 9½ Mammoth, --	Guibal, -------- Guibal, --------	16 16	90 75	.8 .5	Steam, ------ Steam, ------	54,000 56,000	56,000 59,000	49,800 54,000	6 9	297
Buck Ridge Coal Mining Co.													
Buck Ridge Colliery:													
Buck Ridge No. 1, ------ Buck Ridge No. 2, ------ Buck Ridge No. 3, ------ Buck Ridge No. 4, ------	Northumberland,	No. 13 Big Diamond, No. 14 Little Diamond No. 15 Big Tracy, -- No. 16 Little Tracy,	Guibal, -------- Pollock, -------- Pollock, -------- Pollock, --------	14 18 12 12	74 65 30 40	.5 .5 .2 .2	Steam, ------ Steam, ------ Steam, ------ Steam, ------	31,200 56,100 12,400 15,000	31,800 57,600 12,700 15,800	28,100 51,260 12,000 13,800	4 7 4 2	289

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Trevorton Colliery Co. Katherine Colliery: Katherine No. 1, --------- Katherine No. 2, --------- Katherine No. 3, --------- Katherine No. 4, *---------	Northumberland,	No. 2 Lykens Valley No. 3 Lykens Valley No. 5 Buck Mountain No. 5 Buck Mountain No. 7 Skidmore, ---	Stine, --------- Stine, ---------	7 7	360 360	.7 .1	Steam, ------ Steam, ------	33,000 30,900	33,900 32,000	30,800 26,500	7 3	190
Thomas D. Bergen Bergen Colliery: Bergen, ----------	Northumberland,	No. 15 Tracy, ------ No. 16 Tracy, ------	----------	----------	----------	----------	----------	2,000	2,150	1,510	1	10

*Ventilated by natural means no air measurements taken.

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	General Superintendent	Postoffice	Superintendent	Postoffice	Railroad to Mine
Philadelphia and Reading Coal and Iron Co.						
North Franklin,				P. F. Brennan, Division Supt.	Shamokin,	
Bear Valley,						
Burnside,	Northumberland,	G. B. Hadesty,	Pottsville,	John C. Brown, District Supt.	Shamokin,	Philadelphia and Reading
Stirling,						
Henry Clay,				Joseph P. Knapp, District Supt.	Shamokin,	
Big Mountain,						
Susquehanna Coal Co.						
Cameron,						
Luke Fidler,	Northumberland,	R. A. Quin,	Wilkes-Barre,	William Auman,	Shamokin,	Pennsylvania
Hickory Swamp,						
Shipman Koal Co.						
Colbert,	Northumberland,	B. F. James,	Pottsville,	G. Heber Groff,	Shamokin,	Pennsylvania
Buck Ridge Coal Mining Co.						
Buck Ridge,	Northumberland,	Raymond Lewis,	Shamokin,			Penna. and P. and R.
Trevorton Colliery Co.						
Katherine,	Northumberland,	Clarence T. Starr,	Shamokin,			Philadelphia and Reading
Thomas D. Bergen						
Bergen,	Northumberland,	George Shroyer,	Shamokin,			Philadelphia and Reading
Carbon Creek Coal Co.						
Eureka Washery,	Northumberland,	M. F. Dolphin,	Shamokin,			Philadelphia and Reading

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives: Pounds of black powder used	Explosives: Pounds of dynamite used	Explosives: Pounds of permissible explosives used
Philadelphia and Reading Coal and Iron Co.												
North Franklin,	Northumberland,	320,922	32,450	7,223	360,595	239	692	4	11	172,625	44,477	
Bear Valley,		301,364	38,910	1,449	341,723	250	651	----	9	155,775	83,335	
Burnside,		346,052	56,830	19,658	422,540	269	722	----	6	162,150	57,191	
Stirling,							262	5	9	107,200	13,509	
Henry Clay,		281,016	43,159	26,227	350,402	271	509	1	4	83,225	21,371	12,512
Big Mountain,							360	----	5	49,975	44,568	175
Totals,		1,249,354	171,349	54,557	1,475,260	257	3,196	10	44	730,950	264,451	12,687
Susquehanna Coal Co.												
Cameron,	Northumberland,	167,485	41,465	12,917	221,867	164	800	3	14	48,500	20,374	8,200
Luke Fidler,		111,420	36,092	7,350	154,862	169	493	1	5	32,050	8,868	3,112
Hickory Swamp,		64,693	21,818	----------	86,421	181	155	1	2	26,537	11,699	13,062
Totals,		343,598	99,375	20,267	463,150	171	1,448	5	21	107,087	40,941	24,374
Shipman Koal Co.												
Colbert,	Northumberland,	139,220	19,200	692	159,112	245	452	1	2	28,125	73,000	----------
Buck Ridge Coal Mining Co.												
Buck Ridge,	Northumberland,	113,504	14,500	1,512	129,516	195	388	----	10	----------	56,949	4,000

Trevorton Colliery Co. Katherine,	Northumberland,	113,132	7,709	1,310	122,151	248	265	2	4	30,225	17,953	5,502
Thomas D. Bergen Bergen,	Northumberland,	8,400	700		9,100	192	22			6,200	450	
Carbon Creek Coal Co. Eureka Washery,	Northumberland,	7,301	320		7,621	25	25	1			15	
Grand totals,		1,974,419	313,153	78,338	2,365,910		5,796	19	81	902,587	453,759	46,563

TABLE 2.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Names of Operators	County	Power Plant										Pumps				Haulage					Air Compressors	
		Boilers				Engines										Locomotives						
		Cylindrical		Tubular		Steam Engines (All Classes)		Internal Combustion Engines (Gas)		Electric Dynamos (All Classes)				Pumps Delivering Water to the Surface								
		Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total kilowatts	Number	Total capacity in gallons per minute	Number	Approximate number gallons per minute	Number of horses and mules	Gasoline	Steam	Air	Electric	Number	Total capacity cubic feet per minute
Philadelphia and Reading Coal and Iron Co.,	Northumberland,			65	8,100	147	19,113			5	1,815	78	58,252	20	6,763	254		6		15	7	6,633
Susquehanna Coal Co.,				38	4,900	139	9,845			3	300	48	8,133	14	2,900	155		4		3	4	2,290
Shipman Koal Co.,				6	1,200	22	1,100			1	60	3	1,302	2	1,056	35	2	1			4	339
Buck Ridge Coal Mining Co.,				9	1,250	12	1,000					5	3,085	3	1,100	25		3			2	212
Trevorton Colliery Co.,				3	900	7	450					3	810	2	210	25	1				1	600
Thomas D. Bergen,				2	75	2	69															
Carbon Creek Coal Co.,				2	40					1	40	1	100							1		
Totals,				125	16,465	329	31,568			10	2,215	138	71,679	41	12,029	494	3	14		19	18	10,074

TABLE 3. - Part 1.—Number of each class of employes inside and outside of mines

Name of Operators	County	Inside																		Total inside	Outside										Total outside	Grand total inside and outside
		Mine foremen	Assistant mine foremen	Fire bosses	Miners	Miner's laborers	Machine runners and scrapers	Machine miners	Drivers and runners	Motormen and assistants	Doorboys and helpers	Trackmen and brattiemen	Timbermen and rockmen	Pumpmen and pipemen	Electricians and helpers	All other employes		Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Machinists and helpers	Trackmen and helpers	Slate pickers (boys)	Slate pickers (men)	Office employes	All other employes						
Philadelphia and Reading Coal and Iron Co.,	Northumberland	8	49	----	1,037	240	----	----	135	5	19	102	119	16	----	507	2,237	----	5	38	126	5	10	82	51	24	618	959	3,196				
Susquehanna Coal Co.,		3	7	29	392	111	----	----	65	6	13	39	100	18	1	208	992	----	3	27	62	16	7	105	15	19	202	456	1,448				
Shipman Koal Co.,		1	1	5	144	30	----	----	19	5	5	20	12	9	2	44	297	1	2	6	9	4	----	11	8	3	111	155	452				
Buck Ridge Coal Mining Co.,		1	----	5	145	56	----	----	29	----	1	20	12	5	----	15	289	1	1	7	25	3	1	3	4	2	52	99	388				
Trevorton Colliery Co.,		1	----	3	99	26	----	----	15	2	1	6	6	3	----	28	190	1	1	5	9	2	4	12	4	3	34	75	265				
Thomas D. Bergen, Carbon Creek Coal Co.,		1	----	----	5	3	----	----	1	----	----	----	----	----	----	----	10	----	1	1	2	----	----	5	----	----	3	12	22				
		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	1	12	2	1	----	5	----	2	1	25	25				
Totals,		15	57	42	1,822	466	----	----	264	18	39	187	249	51	3	802	4,015	4	14	96	235	31	22	223	82	53	1,021	1,781	5,796				

TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Total
Philadelphia and Reading Coal and Iron Co.,	Northumberland,	23	20	25	17	20	24	23	11	22	24	24	24	257
Susquehanna Coal Co.,		19	14	17	13	15	22	15	11	13	10	8	14	171
Shipman Koal Co.,		19	19	20	20	24	24	21	23	19	15	21	20	245
Buck Ridge Coal Mining Co.,		21	18	21	19	20	12			17	21	23	23	195
Trevorton Colliery,		23	20	20	15	13	17	24	23	24	24	22	23	248
Thomas D. Bergen,		19	18	14	12	6	12	15	14	19	18	23	22	192
Carbon Creek Coal Co.,											4	5	16	25

TABLE 4.—Fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 10	Francis Ney,	American,	Miner,	18	S.			Stirling,		Fatally injured by fall of slate at face of breast. Died January 12.
15	Charles Schaeffer,	American,	Miner,	30	M.	1		Katherine,		Fatally injured by fall of coal at face of breast. Died January 31.
Feb. 2	Joseph Patchutka,	Polish,	Miner,	24	S.			Colbert,		Killed by falling down shaft.
April 3	Thomas Raup,	American,	Miner,	58	M.	1		Katherine,		Killed by fall of coal at face of breast.
May 6	William Rocoskie,	Polish,	Driver,	49	M.	1	3	Stirling,		Fatally injured. Caught between empty mine cars on gangway. Died May 7.
June 3	George Guither,	American,	Miner,	28	M.	1		North Franklin,		Instantly killed by premature explosion of shot. He shortened the squib.
8	Steve Matisick,	Polish,	Driver,	23	M.	1	1	Stirling,		Found dead lying across spreader on gangway. It is supposed that the mule kicked him.
9	Frank Ringeavage,	Polish,	Miner,	41	M.	1	5	Hickory Swamp,		Killed by fall of coal at face of breast.
19	Frank Templin,	American,	Safety inspector,	49	M.	1	1	Cameron,		Killed by fall of rock on gangway.
July 10	Joseph Yashinskie,	Russian,	Miner,	30	M.	1		Cameron,		Found dead sitting in manway.
20	Anthony Buffet,	Italian,	Miner,	42	M.	1	2	Stirling,	Northumberland	Fatally burned by explosion of gas in old breast in which he had worked a few weeks before and used an open light.
Aug. 31	Joseph Clark,	English,	Trackman,	52	M.	1		Stirling,		Fatally injured by mine car jumping off track and catching his head against a prop on slope. Died the same evening.
Sept. 2	Theodore Fullmer,	American,	Loader,	27	S.			Henry Clay,		Smothered by rush of coal from chute while loading mine car on gangway.
9	John Kovoloskie,	Polish,	Laborer,	45	M.	1		Eureka Washery,		Fatally injured by falling off the washery building, a distance of about 32 feet. Died October 5. Outside.
21	Wally Yachuskie,	Polish,	Miner,	37	S.			Luke Fidler,		Fatally injured by fall of clod at face of breast. Died October 4.
Oct. 2	Thomas Orzell,	Polish,	Miner,	45	M.	1	4	North Franklin,		Crushed against side of rock hole. He slipped into chute from face of robbing and the coal following crushed him.

TABLE 4.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
24	Joseph Krawbatz,	American,	Fire boss,	36	M.	1	4	North Franklin,	Northumberland	Skull fractured and body burned by explosion of gas. While making examinations in the morning he ignited gas. Found dead in the chute.
Dec. 18	David Jeremiah,	American,	Miner,	45	M.	1	1	North Franklin,		Fatally injured by fall of slate in heading near face of breast. Died the same evening.
19	Stanley Ostruskie,	American,	Driver,	19	S.			Cameron,		Fatally injured by mine car on gangway. He jumped off car on high side of gangway and in attempting to jump on again, he was caught between car and gangway timber. Died January 6, 1917.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 5	Raymond Zimmer-	American,	Miner,	30	M.	North Franklin,		Head and legs lacerated by fall of coal at face of breast.
12	Alex Kosmochefskie,	Russian,	Miner,	29	S.	Cameron,		Thigh fractured by fall of coal at face of breast.
	Clyde Fisher,	American,	Miner,	35	M.	Katherine,		Back bruised by fall of rock at face of robbing.
13	John Feese,	American,	Laborer,	59	M.	Cameron,		Back bruised. Struck by piece of rock that rolled down culm bank. Outside.
17	Joseph Wysock,	American,	Laborer,	22	S.	Cameron,		Finger crushed. Struck by piece of coal that slid down chute.
18	William J. Persing,	American,	Driver,	39	M.	Cameron,		Leg bruised. Caught between spreader chain and mine car. Outside.
25	John F. Williams,	American,	Miner,	54	M.	Burnside,		Arm broken, face and chest lacerated by premature explosion of shot.
27	Charles Tharzuck,	Lithuanian,	Miner,	32	S.	Burnside,		
31	William Culton,	American,	Laborer,	24	M.	Buck Ridge,	Northumberland,	Arm fractured and scalp lacerated by fall of slate near working face.
Feb. 1	James Gegcento,	Italian,	Miner,	29	M.	Stirling,		Face and hands burned by gas at face of chute. After firing a shot they went into chute with naked lights and ignited gas.
	Mike Caseno,	Italian,	Laborer,	27	S.			
4	John Depner,	American,	Loader,	20	S.	Hickory Swamp,		Clavicle fractured. Caught between mine car and timber on gangway. The mule began to kick and Depner jumped off car.
10	John Targonskie,	Polish,	Miner,	32	M.	Colbert,		Pelvis fractured by fall of rock at face of breast.
24	Lewis Fetterman,	American,	Laborer,	22	M.	North Franklin,		Leg fractured by fall of slate at face of gangway.
	Mike Kowalko,	Russian,	Loader,	18	S.	Luke Fidler,		Leg fractured by rolling cog wheel from under breaker falling on it. Outside.
Mar. 7	Jacob Benedick,	Slavonian,	Miner,	46	M.	North Franklin,		Two ribs fractured by jumping on mine cars while in motion.

TABLE 5.—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Mar. 18	Peter Holdash,	Polish,	Miner,	40	M.	North Franklin,		Foot broken by fall of coal at face of gangway.
20	Jacob Krebs,	American,	Miner,	39	M.	Cameron,		Face, neck, head and arms burned by explosion of powder while making cartridge.
23	John Tarcel,	Polish,	Miner,	23	M.	Burnside,		Arm badly crushed by fall of coal at face of breast and had to be amputated.
28	Joseph Powell,	Italian,	Miner,	38	M.	North Franklin,		Collar bone fractured. Struck by piece of plank near face of breast.
29	Mike Shultz,	Lithuanian,	Miner,	28	S.	Big Mountain,		Face and hands burned by explosion of gas near face of breast. They went up breast with naked lights and ignited gas.
	George Leshcuskie,	Lithuanian,	Miner,	28	S.			
April 3	Ben Horne,	American,	Laborer,	66	M.	Cameron,		Body bruised by fall of rock at face of tunnel.
6	Anth. Tomkill,	Russian,	Miner,	28	S.	Cameron,		Face and hands burned by gas near face of breast.
10	Joseph Pobinskie,	Polish,	Laborer,	19	S.	Big Mountain,	Northumberland,	Knee bruised by falling while drilling at face of breast.
13	Frank Luskoskie,	Polish,	Laborer,	21	S.	Stirling,		Ribs fractured. While loading a car he slipped and a piece of coal struck him.
14	Oscar Supernovige,	Russian,	Miner,	28	M.	Cameron,		Hip dislocated by fall of coal at gangway near face of work.
14	Henry Kramer,	American,	Miner,	57	M.	Burnside,		Knee bruised while working in low vein.
	Tony Sylvester,	Italian,	Laborer,	42	M.	North Franklin,		Hip dislocated by fall of clod at face of breast.
	James O'Conner,	American,	Timberman,	47	M.	Luke Fidler,		Finger crushed by fall of coal on gangway.
20	Samuel Wolfe,	American,	Laborer,	20	S.	North Franklin,		Body bruised. Caught between mine cars at foot of plane.
29	John Swatt, Sr.,	Austrian,	Miner,	39	M.	Burnside,		Back bruised by fall of rock at face of chute.
May 3	Casper Nairens,	English,	Miner,	42	M.	Henry Clay,		Finger broken. Struck by a piece of coal that came down manway.

May	4	John Zias,	Slavonian,	Miner,	27	M.	Stirling,		Face and hands burned by gas, which he ignited with naked light at face of chute.
		Bruno Fidell,	Italian,	Driver,	20	S.	Stirling,		Hip and shoulders bruised. In trying to jump on mine car he slipped and was thrown against brattice on gangway.
		John Ney,	American,	Miner,	35	M.	Bear Valley,		Foot broke by fall of slate at face of breast.
	5	Thomas Hanhoran,	American,	Laborer,	21	S.	Luke Fidler,		Face and hands burned by powder, which he ignited on gangway.
	10	Joseph Bartosick,	Polish,	Coupler,	20	S.	Buck Ridge,		Knee bruised. Caught between mine cars while coupling at foot of slope.
	18	Joseph Biernoskie,	Austrian,	Miner,	32	M.	Bear Valley,		Face and hands burned by gas, which they ignited with naked lights at face of pillar hole.
		Joseph Meek,	Austrian,	Laborer,	27	M.			
June	3	Anth. Gesella,	Austrian,	Miner,	26	S.	Stirling,		Hand lacerated. Struck by coal flying from shot near face of gangway.
		Frank Shultz,	German,	Miner,	47	M.	Buck Ridge,		Face and hands burned by gas, which they ignited at face of breast. They opened locked safety lamps.
		Alex Targinskie,	Polish,	Miner,	32	M.			
	8	Frank Vandeluskie,	Russian,	Miner,	45	M.	Cameron,		Face and hands burned by gas at face of breast. They opened their safety lamps and ignited small body of gas.
		Charles Chervinskie,	Russian,	Miner,	30	M.			
	9	Charles Alleman,	American,	Slatepicker,	16	S.	Cameron,		Legs lacerated by falling into rolls while cleaning up in breaker. Outside.
		John Fegley,	American,	Miner,	50	M.	Burnside,		Wrist broken by falling off scaffold on gangway.
	10	John Matthews,	American,	Driver,	21	S.	Buck Ridge,	Northumberland,	Collar bone fractured. In stepping off mine car on gangway, his clothing caught in car and he was pulled against timber.
	15	Mike Sweetie,	Russian,	Laborer,	28	M.	Buck Ridge,		Back bruised by fall of coal at face of breast.
	29	Lewis Perginskie,	Polish,	Miner,	42	M.	North Franklin,		Arm and leg fractured by fall of slate at face of breast.
July	5	Ward Fetterman,	American,	Miner,	25	S.	Katherine,		Finger broken. Kicked by mule on gangway.
	6	John Tote,	Austrian,	Miner,	54	M.	Bear Valley,		Leg and rib fractured by fall of slate at face of breast.
	11	Albert Haas,	American,	Surveyor,	22	S.	Henry Clay,		Face and hands burned by gas. He went up to face of old breast with naked light and ignited small body of gas.
	13	Ben Krepshaw,	Russian,	Miner,	34	M.	Cameron,		Face and hands cut by coal flying from shot near face of breast.
	18	Alex Shipemskie,	Russian,	Miner,	42	M.	Cameron,		Ankle broken by fall of clod at face of breast.
	21	Charles Couts,	American,	Loader boss,	33	M.	Cameron,		Shoulder broken. Struck by lump of coal that came down chute.

TABLE 5—Continued

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
July 27	Stan Zehefskie,	American,	Laborer,	18	S.	Luke Fidler,		Fingers crushed. Caught in hook while unhitching mule from mine car. Outside.
29	Sylvester Garlic,	Polish,	Laborer,	63	M.	Katherine,		Three ribs fractured. Struck by mine cars on breaker tip. Outside.
Aug. 9	James Rodman,	English,	Timberman,	48	M.	Stirling,		Hand broken by prop falling on it on gangway.
16	Joseph Peifer,	American,	Driver,	30	M.	Bear Valley,		Thumb crushed while coupling mine cars in motion on gangway.
28	James McDonald,	Irish,	Miner,	58	M.	Colbert,		Head, arms and back lacerated by premature explosion of shot near face of chute.
Sept. 12	Alex Kopitznie,	Polish,	Conductor,	18	S.	Buck Ridge,		Knee bruised. Caught between bumpers while coupling mine cars. Outside.
	Griffith Johnson,	American,	Laborer,	18	S.	Bear Valley,		Arms, neck and body scalded by steam from steam hose that bursted at stripping. Outside.
18	John Conwell,	American,	Miner,	52	M.	Big Mountain,	Northumberland,	Face and hands burned by gas, which he ignited with naked light in chute.
29	Alex Geroman,	Polish,	Miner,	29	M.	Buck Ridge,		Face and hands burned by gas near face of breast. Explosion of a shot ignited the gas.
Oct. 2	George Feese,	American,	Miner,	35	M.	North Franklin,		Eye bruised. Struck by a nail flying from under hammer near face of breast.
	Thomas Crawford,	American,	Laborer,	42	M.	North Franklin,		Thumb fractured. Struck by car door on slope.
5	Syl. Yarostick,	Russian,	Laborer,	49	S.	Stirling,		Wrist broken by falling while taking rails up on gangway.
13	R. W. Waters,	English,	Night inspector,	62	M.	Henry Clay,		Ribs fractured by falling off mine car on gangway.
16	Joe Austrian,	Polish,	Miner,	51	M.	Big Mountain,		Leg broken by fall of coal at face of breast.
17	Julian Vilanoskie,	Russian,	Miner,	29	S.	Buck Ridge,		Foot fractured by fall of slate at face of breast.

Oct.	23	Leon Watner,	Polish,	Miner,	45	M.	North Franklin,			Face and chest cut and bruised by premature explosion of blast near face of work.
Nov.	2	Anth. Varaxa,	Polish,	Miner,	29	M.	Katherine,			Collar bone broken by fall of clod at face of breast.
	11	Herbert Mattern,	American,	Carpenter,	36	M.	Henry Clay,			Wrist fractured by falling into coal pocket in breaker. Outside.
	13	William Elster,	American,	Laborer,	49	S.	Stirling,			Ribs fractured by falling off a plank, upon which he was standing, to timber gangway.
	16	John Grobniz,	Polish,	Miner,	29	M.	Buck Ridge,	Northumberland,		Face and hands burned by gas, which he ignited at face of breast.
	17	Washington Whary,	American,	Miner,	64	M.	Bear Valley,			Ribs fractured by fall of slate at face of breast.
	20	John Hessler,	Polish,	Miner,	52	M.	Bear Valley,			Head lacerated by coal flying from shot.
	24	Peter Chocker,	Russian,	Loader,	23	S.	Bear Valley,			Toe fractured by stick of timber falling on it on gangway.
Dec.	21	Richard Jones,	Welsh,	Miner,	53	M.	Hickory Swamp,			Ankle fractured by stick of timber falling on it on gangway.
	26	Ralph Kurtz,	American,	Timberman,	23	S.	Luke Fidler,			Leg broken by stepping into leg-hole on gangway.

CONDITION OF COLLIERIES

PHILADELPHIA AND READING COAL AND IRON COMPANY

North Franklin, Bear Valley, Burnside, Stirling, Henry Clay and Big Mountain Collieries.—Ventilation, roads, drainage and condition as to safety, good.

SUSQUEHANNA COAL COMPANY

Cameron Colliery.—Ventilation, good. Roads, drainage and condition as to safety, fair.

Luke Fidler Colliery.—Ventilation and drainage, good. Roads and condition as to safety, fair.

Hickory Swamp Colliery.—Ventilation, roads, drainage and condition as to safety, good.

SHIPMAN KOAL COMPANY

Colbert Colliery.—Ventilation, roads and condition as to safety, fair. Drainage, poor.

BUCK RIDGE COAL MINING COMPANY

Buck Ridge Colliery.—Ventilation and condition as to safety, good. Roads and drainage, fair.

TREVORTON COLLIERY COMPANY

Katherine Colliery.—Roads, good. Ventilation, drainage and condition as to safety, fair.

THOMAS D. BERGEN

Bergen Colliery.—Ventilation and condition as to safety, good. Drainage, fair.

IMPROVEMENTS

PHILADELPHIA AND READING COAL AND IRON COMPANY

North Franklin Colliery.—A tunnel 78 feet was driven in the Rennie water level from No. 7 to No. 5 vein.

A tunnel 80 feet was driven in Short Slope from No. 9 vein to No. 8½ vein.

Bathhouse, 26 by 54 feet, constructed of concrete and frame, was erected for use of the miners.

Bear Valley Colliery.—Tunnels were driven as follows: One 442 feet long in the Rock slope from No. 9 to No. 11 vein; one 167 feet long in the Rock slope from No. 10 to No. 11 vein; one 305 feet long in No. 2 shaft from No. 10 to No. 11 vein; one 120 feet long in No. 1 shaft from No. 4 to No. 5 vein; one 111 feet long in the Water level from No. 4 to No. 5 vein.

Burnside Colliery.—Tunnels were driven as follows: One 570 feet long in the Water level from No. 5 to No. 7 vein; one 280 feet long in the Shaft from No. 11, through saddle, to No. 10½ vein; one 160 feet long in the Shaft from No. 10 to No. 9 vein; one 290 feet long in the Shaft from No. 10 to No. 10½ vein; one 370 feet long in the Shaft from No. 5 to No. 7 vein.

Stirling Colliery.—A tunnel 178 feet long was driven from No. 7 to No. 8 vein.

Henry Clay Colliery.—A tunnel 360 feet long was driven from No. 7 to No. 4 vein.

Big Mountain Colliery.—A tunnel 330 feet long was driven in No. 1 Slope from No. 10, through saddle, to No. 10 vein, north dip.

SUSQUEHANNA COAL COMPANY

Cameron Colliery.—Tunnels were driven as follows: One 250 feet long in No. 3 slope from No. 5 to No. 8 vein; one 90 feet long in No. 6 drift counter from No. 6 to No. 5 vein; one 185 feet long in Slope from No. 7 to No. 6 vein; one 105 feet long in East drift from No. 10½ to No. 9 vein; one 105 feet long in East drift from No. 7½ to No. 7 vein; one 50 feet long in No. 1 slope from No. 10 south dip to No. 10 north dip vein.

A slope was sunk 170 feet in No. 2 vein.

A fireproof concrete stable was erected in No. 5 vein, shaft.

An extension of 500 feet was added to the electric haulage system in No. 1 drift.

Luke Fidler Colliery.—A tunnel 570 feet long was driven in No. 1 shaft from No. 8 vein to Hickory Swamp basin.

BUCK RIDGE COAL MINING COMPANY

Buck Ridge Colliery.—A tunnel 574 feet long was driven in Water Level to No. 16 vein.

A pump-house was built in No. 7 slope, and a wash-house near No. 7 slope.

A new Stein fan, 6 feet in diameter, was erected to ventilate drift.

A new Guibal fan, 12 feet in diameter was erected to ventilate slope.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in Knights of Columbus Hall, Shamokin, June 6 and 7. The Board of Examiners was composed of P. J. Friel, Inspector; Edward Brennan, Superintendent, Shamokin; Alexander J. Bradley, Miner, Shamokin; Nicholas Davis, Miner, Shamokin.

The following persons passed a satisfactory examination and were granted certificates:

MINE FOREMEN

John F. Joraskie, Frank Templin, Edward V. McKeever, Walter Thomas, Shamokin.

ASSISTANT MINE FOREMEN

Joseph Lahnstein, William Czervenski, Daniel McGlynn, Robert Shuey, Joseph J. Gessic, Shamokin.

TWENTY-FIFTH DISTRICT

SCHUYLKILL AND DAUPHIN COUNTIES

Lykens, Pa., February 20, 1917.

Hon. James E. Roderick, Chief of Department of Mines:

Sir: I have the honor to transmit herewith my annual report as Inspector of Mines of the Twenty-fifth Anthracite District for the year ending December 31, 1916.

The report contains the statistical information as required by law, also a brief description of the fatal and serious non-fatal accidents that occurred during the year.

Respectfully submitted,

CHARLES J. PRICE,
Inspector.

SUMMARY OF STATISTICS

Number of collieries,	7
Number of mines,	22
Number of mines in operation,	22
Number of gaseous mines in operation,	22
Number of tons of coal shipped to market,	1,980,396
Number of tons used at mines for steam and heat,	551,742
Number of tons sold to local trade and used by employes,	43,934
Number of tons produced,	2,576,072
Number of persons employed inside of mines,	3,685
Number of persons employed outside,	1,517
Number of persons employed inside between 16 and 21 years,	330
Number of persons employed outside between 14 and 21 years,	397
Number of fatal accidents inside,	17
Number of non-fatal accidents inside,	41
Number of non-fatal accidents outside,	5
Number of tons of coal produced per fatal accident inside,	151,534
Number of tons produced per fatal accident inside and outside,	151,534
Number of persons employed per fatal accident inside,	217
Number of persons employed per fatal accident inside and outside,	306
Number of persons employed per non-fatal accident inside,	90
Number of persons employed per non-fatal accident outside,	303
Number of persons employed per non-fatal accident inside and outside,	113
Number of wives made widows,	12
Number of children made orphans,	27
Number of steam locomotives outside,	21
Number of compressed air locomotives inside,	3
Number of electric motors inside,	24
Number of electric motors outside,	5
Number of gasoline locomotives inside,	2
Number of cylindrical boilers,	5

Number of tubular boilers,	171
Number of steam engines of all classes,	270
Number of internal combustion engines (gas),	1
Number of electric dynamos,	10
Number of pumps of all classes,	135
Number of pumps delivering water to surface,	20
Number of air compressors,	16
Number of fans in use,	20

TABLE A

PRODUCTION OF COAL

Names of Operators	Tons
Philadelphia and Reading Coal and Iron Company, ...	1,469,257
Susquehanna Coal Company, ...	880,566
Lehigh Valley Coal Company, ...	226,249
Total, ...	2,576,072

Production by Counties

Schuylkill, ...	1,695,506
Dauphin, ...	880,566
Total, ...	2,576,072

TABLE B.—Fatal and non-fatal accidents inside and outside of mines, number of tons of coal produced per accident, number of persons employed, number employed per accident

Names of Operators	Fatal Accidents			Non-Fatal Accidents			Tons of coal produced per fatal accident inside	Tons of coal produced per non-fatal accident inside	Number of employes inside	Number of employes outside	Total number of employes	Number of employes inside per fatal accident	Number of employes outside per fatal accident	Number of employes inside per non-fatal accident	Number of employes outside per non-fatal accident
	Inside	Outside	Total	Inside	Outside	Total									
Philadelphia and Reading Coal and Iron Co.,	8	------	8	21	2	23	183,657	69,965	1,981	761	2,742	248	--------	94	380
Susquehanna Coal Co.,	5	------	5	18	3	21	176,113	48,920	1,376	653	2,029	275	--------	76	218
Lehigh Valley Coal Co.,	4	------	4	2	------	2	56,562	113,124	328	103	431	--------	--------	--------	--------
Totals and averages,	17	------	17	41	5	46	151,534	62,831	3,685	1,517	5,202	217	--------	90	303

TABLE C.—Causes of Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,		1											1	5.88
Falls of slate,			1						1			1	3	17.65
Mine cars,	2		1										3	17.65
Explosions of gas,			1		1								2	11.77
Suffocation by gas, etc.,				1			1						2	11.77
Blasts, premature and otherwise,	2				1								3	17.64
Rush of gob,									1				1	5.88
Struck by timber,			1										1	5.88
Rush of coal,			1										1	5.88
Totals,	4	1	5	1	2		1		2			1	17	100.00
Outside (No accidents.)														

TABLE D.—Causes of Non-Fatal Accidents Inside and Outside of Mines

	Months													
	January	February	March	April	May	June	July	August	September	October	November	December	Totals	Percentages
Inside														
Falls of coal,	1				1						1	1	4	9.75
Falls of slate,	2	1				1		1	1				6	14.63
Falls of roof,				1									1	2.44
Mine cars,			2			1		1		1	2	1	8	19.51
Explosions of gas,			4	2				1	5		1		13	31.71
Blasts, premature and otherwise,		1	1										2	4.88
Struck by debris,												1	1	2.44
Struck by timber,									2				2	4.88
Struck by piece of coal,			1										1	2.44
Struck by ax,	1												1	2.44
Struck by hammer,	1												1	2.44
Rush of rock,							1						1	2.44
Totals,	5	2	8	3	1	2	1	3	8	1	4	3	41	100.00
Outside														
Cars,		1	1						1	1			4	80.00
Animals,							1						1	20.00
Totals,		1	1				1		1	1			5	100.00
Grand totals,	5	3	9	3	1	2	2	3	9	2	4	3	46	

TABLE E.—Occupations of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Mine foremen,	1												1
Miners,		1	1	1	2		1		2			1	9
Miners' laborers,			2										2
Drivers and runners,			1										1
Repairmen,			1										1
Muck bosses,	1												1
Patchers,	1												1
Loaders,	1												1
Totals,	4	1	5	1	2		1		2			1	17
Outside (No accidents.)													

TABLE F.—Occupations of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Inside													
Fire bosses,									1		1		2
Miners,	4	1	5	3	1	1	1	1	1		1	1	20
Miners' laborers,	1	1	2					2	2	1	2	1	12
Drivers and runners,						1			1				2
Timbermen and rockmen,			1						1				2
Repairmen,									2			1	3
Totals,	5	2	8	3	1	2	1	3	8	1	4	3	41
Outside													
Drivers,							1						1
Miners' laborers,		1	1						1	1			4
Totals,		1	1				1		1	1			5
Grand totals,	5	3	9	3	1	2	2	3	9	2	4	3	46

TABLE G.—Nationality of Persons Killed or Fatally Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	1	1	3	1	2				2			1	11
Polish,			1										1
Italian,	1												1
Lithuanian,			1										1
Austrian,	1						1						2
Tyrolean,	1												1
Totals,	4	1	5	1	2		1		2			1	17

TABLE H.—Nationality of Persons Injured Inside and Outside of Mines

	Months												
	January	February	March	April	May	June	July	August	September	October	November	December	Totals
American,	3	2	9	3	1	2	2	3	8	1	3	3	40
Hungarian,		1											1
Austrian,	1								1	1			3
Russian,	1										1		2
Totals,	5	3	9	3	1	2	2	3	9	2	4	3	46

TABLE I.—Operators and mines, name of coal bed, kind of openings, safety lamps used, type and size of fans, volume of air produced by fan per minute, number of splits of air currents and number of persons employed inside

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind or Opening			Gaseous or non-gaseous	Number and Types of Safety Lamps Used	
				Shaft	Slope (Coal or Rock)		Drift		
				Depth	Length	Average pitch—degrees		Flame	Electric
Philadelphia and Reading Coal and Iron Co.									
Lincoln Colliery:									
Lincoln No. 1,	Schuylkill,	Lykens Nos. 1, 2, 3, 4 and 5.	48	907	2,549	30		225	
Lincoln No. 2,			48		1,234	30			
Lincoln No. 5,			54		633	28		Gaseous,	
Lincoln No. 2 Inside,			48		682	29			
Lincoln No. 2 Trial,					1,775	14			
Lincoln Kalmia,			84		1,089	20			
Brookside Colliery:									
Brookside West,	Schuylkill,	Lykens Nos. 4 and 5	48		1,040	30		60	
Brookside No. 4 Basin,			108		4,204	10		Gaseous,	
Brookside Water Level,					470	18			
Good Spring Colliery:									
		Buck Mountain,	48		1,379	46		Gaseous,	243	
		Skidmore,	66		724	50			
Good Spring No. 1,		Mammoth,	96						
Good Spring No. 3,	Schuylkill,	Holmes,	54						
		Primrose,	36						
		Orchard,	40						
		Tracy,	60						
Susquehanna Coal Co.									
Williamstown Colliery:									
Number 1,	Dauphin,	Big Lykens,	96	844		18			
Number 2,		Whites,	36	1,650	960	53		398	34
Number 3,		Little Lykens,	48		674	37		Gaseous,	
Bear Valley,		Twin,	27						
Big Lick,		Number 7,	48						

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Average height of seam in inches	Kind of Opening				Gaseous or non-gaseous	Number and Types of Safety Lamps Used	
				Shaft	Slope (Coal or Rock)		Drift			
				Depth	Length	Average pitch—degrees			Flame	Electric
Short Mountain Colliery:										
Short Mountain,	Dauphin,	Whites,	39	1,640				Gaseous,		
Lykens Valley,		Big Lykens,	84						351	
Bear Gap,		Little Lykens,	48				Tunnel,			
Lehigh Valley Coal Co. Blackwood Colliery:										
Blackwood,	Schuylkill,	Tracy,	36							
Number 4,		Big Diamond,	48							
Dundas,		Little Diamond,	24	480				Gaseous,	112	
		Holmes,	60				Tunnel,		5	
		Primrose,	72				Tunnel,			
		Mammoth,	96							
		Skidmore,	30							
		Buck Mountain,	30							

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolutions per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of split of air currents	Number of persons employed inside
Philadelphia and Reading Coal and Iron Co.												
Lincoln Colliery:												
Lincoln No. 1,			Guibal,	21	85	2	Electricity,	134,110	139,700	33,374	17	
Lincoln No. 2,			Guibal,	18	98	2	Steam,	77,770	82,042	29,466	13	
Lincoln No. 5,	Schuylkill,	Lykens Nos. 1, 2, 3, 4 and 5.	Guibal,	12	88	.7	Electricity,	38,964	39,976	5,258	3	851
Lincoln No. 2 Inside,												
Lincoln No. 2 Trial,												
Lincoln Kalmia,												
Brookside Colliery:												
Brookside West,			Guibal,	18	85	1.4	Steam,					
Brookside No. 4 Basin,	Schuylkill,	Lykens Nos. 4 and 5	Guibal,	18	70	.8	Steam,	112,448	115,540	14,356	10	320
Brookside Water Level,												
Good Spring Colliery:												
		Buck Mountain,		18	80	.8						
		Skidmore,		18	80	1.1						
Good Spring No. 1,		Mammoth,	Guibal,	18	90	1	Steam,	170,875	174,277	28,395	19	387
Good Spring No. 3,	Schuylkill,	Holmes,		14	95	1						
		Primrose,										
		Orchard,										
		Tracy,										
Susquehanna Coal Co.												
Williamstown Colliery:												
Number 1,		Big Lykens,	Vulcan,	25	70	2.7	Steam,	58,000	59,645	1,200		
Number 2,		Whites,	Vulcan,	25	60	1.5	Steam,	45,000	51,000	1,200		
Number 3,	Dauphin,	Little Lykens,	Vulcan,	25	60	1.4	Steam,	101,000	102,500	1,200	22	639
Bear Valley,		Twin,	Guibal,	14	135	1.8	Steam,	34,000	35,700	1,200		
Big Lick,		Number 7,	Vulcan,	10	130	1.1	Steam,	25,000	27,200	1,200		

TABLE I.—Continued

Names of Operators and Mines	County	Geological and Local Name of Coal Bed	Name of fan	Diameter of fan in feet	Revolution per minute	Water gauge developed in inches	Power used	Cubic feet of air per minute entering inlet	Cubic feet of air per minute passing at outlet	Cubic feet of air per minute passing through last cut-through in gangways	Number of splits of air currents	Number of persons employed inside
Short Mountain Colliery:												
Short Mountain,	Dauphin,	Whites,	Vulcan,	14	130	2	Steam,	123,000	124,000	1,100	6	737
Lykens Valley,		Big Lykens,	Guibal,	15.8	160	1.5	Steam,	49,000	51,000	1,100	3	
Bear Gap,		Little Lykens,	Sturtevant,	10	160	1.9	Electricity,	33,000	34,100	1,100	3	
Lehigh Valley Coal Co.												
Blackwood Colliery:												
	Schuylkill,	Tracy,	Guibal,	20	80	1.3	Steam,	144,000	144,000	150,000	28	272
Blackwood,		Big Diamond,	Guibal,	20	80	1.3						
Number 4,		Little Diamond,	Guibal,	12	90	.8						
Dundas,		Holmes,										
		Primrose,										
		Mammoth,										
		Skidmore,										
		Buck Mountain,										

TABLE 1.—Operators, location of collieries, railroads, etc.

Names of Operators and Collieries	County	General Superintendent	Post Office	Superintendent	Post Office.	Railroad to Mine
Philadelphia and Reading Coal and Iron Co.						
Lincoln,	Schuylkill,	E. E. Kaercher,	Pottsville,	M. J. Doyle, Division Supt.; R. J. Schneider, Inside District Supt.; Joseph H. Lee, Outside District Supt.	Tremont,	Philadelphia and Reading
Brookside,						
Good Spring,						
Valley View,*						
Rausch Creek Washery,						
Middle Creek Washery,						
Susquehanna Coal Co.						
Williamstown,	Dauphin,	R. A. Quin,	Wilkes-Barre,	D. V. Randall,	Lykens,	Philadelphia and Reading
Short Mountain,						
Williamstown Washery,						
Short Mountain Washery,						
Lehigh Valley Coal Co.						
Blackwood,	Schuylkill,	Thomas Thomas,	Wilkes-Barre,	Dellwyn S. Wolfe,	Mahanoy City,	Lehigh Valley

*Idle.

TABLE 2.—Part 1.—Number of tons of coal mined, number of days worked, number of persons employed, number killed and injured and quantity of powder, dynamite and permissible explosives used

Names of Operators and Collieries	County	Tons of coal shipped to market	Tons used at collieries for steam and heat	Tons sold to local trade and used by employes	Total production of coal in tons	Number of days worked	Number of employes	Number of fatal accidents	Number of non-fatal accidents	Explosives		
										Pounds of black powder used	Pounds of dynamite used	Pounds of permissible explosives used
Philadelphia and Reading Coal and Iron Co.												
Lincoln,	Schuylkill,	319,613	100,095	8,303	428,011	230	980	3	4	44,900	87,716	8,540
Brookside,		295,942	76,106	59	372,107	271	968	3	10	13,775	116,054	2,550
Good Spring,		234,672	109,894	8,934	353,500	263	593	2	9		130,335	26,972
Valley View,				179	179		2				37	
		850,227	286,095	17,475	1,153,797		2,543	8	23	58,675	334,142	38,062
Washeries												
Rausch Creek,	Schuylkill,	154,628	20,528		175,156	288	116				1,175	
Middle Creek,		132,946	7,307	51	140,304	211	83				94	
		287,574	27,835	51	315,460		199				1,269	
Totals,		1,137,801	313,930	17,526	1,469,257		2,742	8	23	58,675	335,411	38,062
Susquehanna Coal Co.												
Williamstown,	Dauphin,	280,302	54,271	7,519	342,092	257	983	1	6	3,675	61,175	122,445
Short Mountain,		258,310	60,530	17,820	336,660	261	991	4	15	60,800	84,772	17,812
		538,612	114,801	25,339	678,752		1,974	5	21	64,475	145,947	140,257

Williamstown,	Dauphin,	52,633	74,122		126,755	498	31							
Short Mountain,		53,708	21,351		75,059	321	24							
Totals,		106,341	95,473		201,814		55							
Lehigh Valley Coal Co.		644,053	210,274	25,339	880,566		2,029	5	21	64,475	145,947	140,257		
Blackwood,	Schuylkill,	197,642	27,538	1,069	226,249	274	431	4	2		60,915	90,812		
Grand totals,		1,980,396	551,742	43,934	2,576,072		5,202	17	46	123,150	542,273	269,131		

TABLE 2.—Part 2.—Number and kinds of boilers, engines, locomotives, pumps and air compressors in use

Names of Operators	County	Power Plant										Pumps				Haulage						Air Compressors	
		Boilers				Engines											Locomotives						
		Cylindrical		Tubular		Steam Engines (All Classes)		Internal Combustion Engines (Gas)		Electric Dynamos (All Classes)		Number	Total capacity in gallons per minute	Pumps Delivering Water to the Surface		Number of horses and mules	Gasoline		Steam		Air	Electric	Number	Total capacity cubic feet per minute
		Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total horse power	Number	Total kilowatts			Number	Approximate number of gallons per minute								
Philadelphia and Reading Coal and Iron Co.,	Schuylkill,			72	8,950	128	22,737			4	685	74	47,058	8	5,780	252			11		3	12	7	3,469
Susquehanna Coal Co.,	Dauphin,	5	675	92	11,175	131	15,146			5	780	46	19,960	10	8,161	178			7			11	7	3,000
Lehigh Valley Coal Co.,	Schuylkill,			7	1,640	11	2,560	1	25	1	175	15	7,000	2	2,900	18		2	3			6	2	2,200
Totals,		5	675	171	21,765	270	40,443	1	25	10	1,640	135	74,018	20	16,841	448		2	21		3	29	16	8,609

TABLE 3.—Part 1.—Number of each class of employes inside and outside of mines

Names of Operators	County	Inside																	Total inside	Outside											Total outside	Grand total inside and outside
		Mine foremen	Assistant mine foremen	Fire bosses	Miners	Miners 'laborers	Machine miners	Machine runners and scrapers	Drivers and runners	Motormen and assistants	Doorboys and helpers	Trackmen and bratticemen	Timbermen and rockmen	Pumpmen and pipemen	Electricians and helpers	All other employes		Superintendents	Foremen	Blacksmiths and carpenters	Engineers and firemen	Machinists and helpers	Trackmen and helpers	Slate pickers (boys)	Slate pickers (men)	Office employes	All other employes					
Philadelphia and Reading Coal and Iron Co.,	Schuylkill,	6	66	----	578	261	--	----	103	9	28	225	98	4	----	603	1,981	----	5	29	128	6	11	15	23	14	530	761	2,742				
Susquehanna Coal Co.,	Dauphin,	3	10	29	484	100	--	----	92	14	14	10	109	26	3	482	1,376	2	2	49	149	11	12	52	----	12	364	653	2,029				
Lehigh Valley Coal Co.,	Schuylkill,	1	8	----	177	55	--	----	4	16	4	4	4	2	3	50	328	----	1	15	11	2	2	6	----	3	63	103	431				
Totals,		10	84	29	1,239	416	--	----	199	39	46	239	211	32	6	1,135	3,685	2	8	93	288	19	25	73	23	29	957	1,517	5,202				

TABLE 3.—Part 2

Names of Operators	County	Average Number of Days Worked Monthly												
		January	February	March	April	May	June	July	August	September	October	November	December	Total
Philadelphia and Reading Coal and Iron Co.,	Schuylkill,	25	23	25	16	17	19	17	26	19	24	20	24	255
	Dauphin,	23	19	27	13	18	23	20	24	22	24	24	22	259
	Schuylkill,	23	23	24	16	24	23	23	24	24	23	24	23	274
Susquehanna Coal Co.,														
Lehigh Valley Coal Co.,														

TABLE 4.—Fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Number of widows	Number of orphans	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 22	Victor Felia,	Italian,	Muck boss,	28	M.	1	2	Blackwood,	Schuylkill,	Instantly killed by explosion of blast at face of tunnel.
	Con Predelle,	Tyrolean,	Mine foreman,	37	M.	1		Blackwood,	Schuylkill,	Fatally injured by explosion of blast at face of tunnel.
26	Frank Smyk,	Austrian,	Patcher,	20	S.			Blackwood,	Schuylkill,	Fatally injured by cars on gangway.
31	Frank Kline,	American,	Loader,	21	S.			Short Mountain,	Dauphin,	Fatally injured by cars on gangway.
Feb. 16	Henry Schwalm,	American,	Miner,	63	M.	1		Good Spring,	Schuylkill,	Fatally injured by fall of coal on gangway while timbering.
Mar. 2	Calvin Daubert,	American,	Miner,	36	M.	1	5	Blackwood,	Schuylkill,	Instantly killed by rush of coal in chute.
7	Jacob Derrick,	American,	Laborer,	21	M.	1		Short Mountain,	Dauphin,	Fatally injured by explosion of gas at face of gangway.
14	Barney Koher,	Polish,	Laborer,	39	M.	1	4	Brookside,	Schuylkill,	Fatally injured by being struck by prop on gangway.
15	John Labord,	Lithuanian,	Repairman,	25	S.			Brookside,	Schuylkill,	Fatally injured by fall of slate at mouth of tunnel.
18	George McCoy,	American,	Driver,	19	S.			Short Mountain,	Dauphin,	Instantly killed by runaway trip of cars on gangway.
April 19	Joseph Opolong,	American,	Miner,	33	M.	1	2	Williamstown,	Dauphin,	Suffocated by rush of fine coal in battery.
May 5	Wm. H. Schoffstall,	American,	Miner,	28	M.	1		Short Mountain,	Dauphin,	Fatally injured by explosion of blast at face of breast.
8	John Krommes,	American,	Miner,	26	M.	1	3	Lincoln,	Schuylkill,	Fatally injured by explosion of gas at face of breast.
July 6	Waladis Zeroto,	Lithuanian,	Miner,	27	M.	1	1	Brookside,	Schuylkill,	Suffocated by gas in chute.
Sept. 13	William Gammell,	American,	Miner,	55	W.			Good Spring,	Schuylkill,	Instantly killed by rush of gob in manway.
30	Adam Ditzler,	American,	Miner,	41	M.	1	4	Lincoln,	Schuylkill,	Instantly killed by fall of slate at face of gangway.
Dec. 13	Nathan Rightler,	American,	Miner,	51	M.	1	6	Lincoln,	Schuylkill,	Fatally injured by fall of slate at face of breast.

TABLE 5.—Non-fatal accidents inside and outside of mines

Date	Name of Person	Nationality	Occupation	Age	Married or single	Name of Colliery	County	Nature and Cause of Accident in Brief
Jan. 4	Lewis Grandy,	Austrian,	Miner,	25	S.	Blackwood,	Schuylkill,	Arm broken. Struck by hammer while holding drill.
6	Harry Campbell,	American,	Miner,	28	M.	Williamstown,	Dauphin,	Leg injured by fall of coal at face of breast.
10	Frank Susanavage,	Russian,	Miner,	31	M.	Blackwood,	Schuylkill,	Finger cut off by ax while making wedge at face of working place.
11	Daniel Bohner,	American,	Laborer,	23	M.	Short Mountain,	Dauphin,	Hip injured by fall of slate while sinking slope.
26	Edgar Mason,	American,	Miner,	51	M.	Williamstown,	Dauphin,	Face and side injured by fall of slate while robbing pillars.
Feb. 15	Mike Shermock,	Hungarian,	Laborer,	26	S.	Brookside,	Schuylkill,	Leg injured by cars. Outside.
18	Harry Kline,	American,	Laborer,	25	S.	Brookside,	Schuylkill,	Eyes, face and body injured by blast at face of gangway.
23	Richard McNamara,	American,	Miner,	50	M.	Williamstown,	Dauphin,	Leg injured by fall of slate at face of gangway.
March 7	William Ellinger,	American,	Miner,	46	M.	Short Mountain,	Dauphin,	Severely burned by explosion of gas at face of gangway.
8	Rufus Swartz,	American,	Miner,	40	M.			
	Elmer Ellinger,	American,	Miner,	33	M.	Good Spring,	Schuylkill,	Hands, face and body burned by explosion of gas.
	Howard Hepler,	American,	Miner,	24	M.			
14	Ray Woll,	American,	Laborer,	21	S.	Brookside,	Schuylkill,	Wrist fractured by cars on gangway.
16	Elmer Bender,	American,	Laborer,	20	S.	Lincoln,	Schuylkill,	Shoulder fractuerd by cars. Outside.
28	Harvey Deevan,	American,	Laborer,	25	M.	Lincoln,	Schuylkill,	Finger crushed and arm badly injured by cars.
	Henry Laudenslager,	American,	Timberman,	45	W.	Short Mountain,	Dauphin,	Eye badly injured. Struck by piece of coal.
31	Andy Mehalko,	American,	Miner,	21	S.	Williamstown,	Dauphin,	Eyes, face and breast injured by explosion of blast at face of gangway.
April 18	Isaac Zerby,	American,	Miner,	42	M.	Short Mountain,	Dauphin,	Compound fracture of leg by fall of rock.
20	Joseph Matter,	American,	Miner,	37	M.	Short Mountain,	Dauphin,	Severely burned by explosion of gas while driving air hole.
20	Robert Matter,	American,	Miner,	35	M.			
May 5	Charles English,	American,	Miner,	45	M.	Brookside,	Schuylkill,	Shoulder dislocated by fall of coal while driving chutes and headings.
June 5	John H. Updegrove,	American,	Miner,	49	W.	Good Spring,	Schuylkill,	Face, hip and leg injured by fall of slate in breast.

June	14	John Zarker,	American,	Runner,	35	S.	Brookside,	Schuylkill,	Hand fractuerd between car and rib on gangway.
July	7	Milton Reightler,	American,	Miner,	49	M.	Brookside,	Schuylkill,	Hip and abdomen injured by rush of rock in chute.
	29	Charles Esterline,	American,	Driver,	62	M.	Short Mountain,	Dauphin,	Nose broken and face injured. Kicked by mule. Outside.
Aug.	15	Walter Shoop,	American,	Laborer,	32	M.	Brookside,	Schuylkill,	Face, neck and hands burned by explosion of carbide gas on gangway.
	26	George Shearers,	American,	Laborer,	36	M.	Short Mountain,	Dauphin,	Jaw and shoulder injured. Caught between car and chute on gangway.
	29	Thomas Bateman,	American,	Miner,	49	M.	Short Mountain,	Dauphin,	Pelvis fractured by fall of slate while starting breast.
Sept.	1	Charles Fertig,	American,	Miner,	31	M.	Short Mountain,	Dauphin,	Hip dislocated and back bruised by fall of slate at face of gangway.
	13	Andrew Barder,	Austrian,	Timberman,	40	M.	Short Mountain,	Dauphin,	Leg fractured. Struck by timber while unloading it from cage.
	16	Charles E. Daniels,	American,	Laborer,	16	S.	Short Mountain,	Dauphin,	Ear injured. Caught between railroad car and post at breaker. Outside.
	25	James E. Thomas,	American,	Fire boss,	48	M.	Short Mountain,	Dauphin,	Hand crushed by prop falling on it in tunnel.
	27	E. D. W. Dunkelberger,	American,	Repairman,	30	S.			
		George Thoma,	American,	Repairman,	42	M.	Good Spring,	Schuylkill,	Severely burned by explosion of gas on gangway.
		John Smith,	American,	Laborer,	30	S.			
		Charles Spotts,	American,	Laborer,	28	M.			
		Lawrence Tobin,	American,	Driver,	19	M.			
Oct.	2	Herman Lehman,	American,	Laborer,	17	S.	Brookside,	Schuylkill,	Leg injured by cars on top of plane.
	23	Mike Messa,	Austrian,	Laborer,	55	M.	Williamstown,	Dauphin,	Arm injured by cars. Outside.
Nov.	8	Edward Procasco,	American,	Fire boss,	40	M.	Willimastown,	Dauphin,	Hands and face burned by explosion of gas.
	17	Raymond Snyder,	American,	Laborer,	22	M.	Short Mountain,	Dauphin,	Body badly bruised by fall of coal on gangway.
	20	Charles Tobias,	American,	Miner,	42	M.	Lincoln,	Schuylkill,	Ankle fractured by cars on gangway.
	23	Mike Blusquick,	Russian,	Laborer,	26	M.	Brookside,	Schuylkill,	Legs injured by cars on gangway.
Dec.	18	Charles Schrope,	American,	Miner,	34	M.	Brookside,	Schuylkill,	Back, hip and arm bruised by fall of coal at face of breast.
	20	Charles Higgins,	American,	Repairman,	48	M.	Short Mountain,	Dauphin,	Head and body cut by flying debris from door on gangway, which was struck by cars.
	22	Fred Zettlemoyer,	American,	Laborer,	34	S.	Lincoln,	Schuylkill,	Leg fractured by cars on slope.

CONDITION OF COLLIERIES

PHILADELPHIA AND READING COAL AND IRON COMPANY

Lincoln, Brookside and Good Spring Collieries.—Ventilation, drainage and condition as to safety, good.

SUSQUEHANNA COAL COMPANY

Williamstown and Short Mountain Collieries.—Ventilation and condition as to safety, good. Drainage, fair.

LEHIGH VALLEY COAL COMPANY

Blackwood Colliery.—Ventilation, drainage and condition as to safety, good.

IMPROVEMENTS

PHILADELPHIA AND READING COAL AND IRON COMPANY

Lincoln Colliery.—Kalmia No. 2 vein slope west of colliery has been sunk a distance of 1,089 feet from surface.

Electric haulage has been installed in the East No. 4 vein gangway, 6th lift.

Brookside Colliery, East Section.—Air haulage has been extended on the 5th lift from No. 4 plane to breast No. 74 on West No. 5 vein gangway, a distance of 2,650 feet.

A tunnel has been driven on the 4th lift from No. 4 vein to coal and water shaft, a distance of 693 feet, of which 280 feet are double-tracked.

A back-switch tunnel has been driven on 4th lift at shaft, a distance of 86 feet.

A run-around tunnel has been driven on 4th lift at shaft, a distance of 160 feet, connecting the main tunnel and back-switch tunnel.

A tunnel is being driven on 4th lift No. 4 plane level from the West No. 5 vein gangway at branch No. 31, to the No. 4 vein, and has reached a distance of 147 feet.

Good Spring Colliery.—A tunnel has been driven at No. 1 slope on the 4th lift 120 feet east of Tender slope, from the Mammoth vein to the Skidmore vein, a distance of 134 feet.

A tunnel has been driven at No. 1 slope on 4th lift 120 feet east of Tender slope, from the Mammoth vein to the Primrose vein, a distance of 361 feet.

Rausch Creek Washery.—A track has been laid from East Franklin banks to new Lincoln banks, a distance of 4,650 feet, for the purpose of hauling these banks to the washery.

SUSQUEHANNA COAL COMPANY

Williamstown Colliery.—Installed 6 new jigs in breaker; electric power plant; new pump and electric fan.

Tunnels were driven as follows: Big Lick slope to White Ash measures; E Lykens vein to E Lykens vein No. 2 shaft counter;

East No. 9½ vein to No. 11 vein; No. 2 shaft rock plane; No. 7 vein Big Lick slope; No. 9 vein overlap to No. 11 vein No. 2 shaft; No. 11 vein to No. 9 vein, No. 1 shaft; No. 9 vein to No. 11 vein No. 2 shaft rock plane; No. 11 vein to No. 7 vein No. 1 shaft, south tunnel. Drove pump slope East No. 9 vein No. 1 shaft bottom. Drove air shaft at Bear Valley. Built wash-house at No. shaft, and stable at No. 2 shaft counter.

Short Mountain Colliery.—Tunnels were driven as follows: No. 7 level; No. 5 level; Top No. 2 basin slope; No. 2 level Big vein to Whites vein; No. 1 level; No. 2 basin slope; Gangway P. East White Ash; No. 3 level Big vein to Whites vein; No. 1 level east pocket W. V. to L. V.

Airways were driven as follows: No. 1 level East Whites vein and East side air slope.

Drove East-side air slope; Valentine crosscut; plane Big vein West Bear Gap slope; fan-way Bear Gap slope; plane No. 5 level Big vein; No. 2 basin slope; No. 1 basin slope; White Ash trial slope and traveling way No. 5 level Big vein.

Installed 36 mine cars and buggies; electric generator plant. Built hospital No. 1 level and No. 5 level.

LEHIGH VALLEY COAL COMPANY

Blackwood Colliery.—The second level landing and empty and loaded track tunnels were completed. A tunnel 8 feet by 17 feet and 280 feet long and a tunnel 8 feet by 12 feet and 1,825 feet long were driven to the Tracy vein, which connected the slant slope in the Tracy vein with the shaft. The tunnel is now being extended from the Tracy vein to the Buck Mountain vein. There were 68 sets of steel timber erected in the empty and loaded track tunnels. A tunnel is now being driven from the Buck Mountain vein to the Tracy vein on the main level in the vicinity of the Dundas tunnel. The No. 1 crosscut tunnel east has been extended north to the little Diamond vein, a distance of 180 feet.

A 4-inch steam line was constructed from the boiler house to the wash-water pump, a distance of 1,200 feet.

MINE FOREMEN'S EXAMINATIONS

The annual examination of applicants for certificates of qualification as mine foremen and assistant mine foremen was held in Lykens June 6 and 7. The Board of Examiners was composed of Charles J. Price, Mine Inspector; D. V. Randall, Superintendent, Lykens; William King, Miner, Tower City and Samuel Evans, Miner, Minersville.

The following persons passed a satisfactory examination and were granted certificates:

MINE FOREMEN

Charles G. Fromme, Charles O. Barry, Williamstown; Robert L. Price, Willoughby F. Geist, Tower City.

ASSISTANT MINE FOREMEN

Emanuel T. Wagner, Williamstown; Thomas H. Shreiffler, Lykens; William C. Hoy, Joliett; William E. Boden, Wiconisco.

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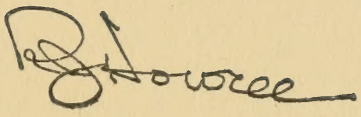
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